SECTION 4 ENVIRONMENTAL CONSEQUENCES

Having discussed the existing conditions of the study area's socioeconomic, natural and physical environment in Section 3, Section 4 presents the evaluation of the project's potential effect on the previously identified environmental features. Unless otherwise stated, the boundary for the analysis of impacts is identical to the Gulf Coast Parkway study area shown in Figure 1-1. For those environmental features commented upon by the Environmental Technical Advisory Team (ETAT) after their review of the project in the Environmental Screening Tool (EST), the discussion (shown in blue font) begins with a summary of the comments and how or where the concerns have been addressed. This is followed by a discussion of the project's effects and the avoidance, minimization and/or mitigation measures either undertaken or proposed. .

4.1 SOCIOCULTURAL EFFECTS

In accordance with Part 2, Chapter 9 of Florida Department of Transportation (FDOT's) *Project Development and Environment (PD&E) Manual*[1] and FDOT *Sociocultural Effects Evaluation Policy* (000-650-015)[2], a Sociocultural Effects (SCE) Evaluation has been completed for the Gulf Coast Parkway PD&E Study. The SCE assesses a proposed project's effects on the community in which the project is located. It takes into consideration the social, economic, land use, mobility, aesthetic, and relocation issues with consideration of any Civil Rights implications. The following summarizes the results of that evaluation for the proposed Gulf Coast Parkway project.

4.1.1 Social Impacts

The Gulf Coast Parkway study area for the evaluation of social impacts encompasses a range of social environments, including rural, small communities, suburban, and urban. Due the need to conduct an indirect and cumulative effects (ICE) evaluation for this project, the evaluation of social impacts utilized a much larger study area than that for the proposed project. The social impacts study area was divided into sub-areas comprised of a relatively consistent social fabric. The subareas are shown on **Figure 4-1** and are identified as: Bayou George, Panama City Incorporated, Tyndall, Mexico Beach, Wettapo, Wewahitchka, Unincorporated, and Enterprise Zones.

The project's effects on the social environment within these subareas would vary depending on the alternative being considered. Therefore, the impacts of each alternative have been evaluated on those individual components of the social environment most-influenced by transportation improvements, such as population growth, community cohesion, mobility, and safety.

4.1.1.1 Population Growth

Population projections for Calhoun, Gulf and Bay Counties have been addressed in Section 3.0 of this document. This information was analyzed to identify growth trends occurring in the study area in order to predict potential locations of future population growth. Census block group data from the 1990, 2000, and 2010 Census[3] for Bay, Gulf, and Calhoun Counties was examined. The geographical locations of the Block Groups comprising the Gulf Coast Parkway study area are shown in **Figure 4-2**. Some Block Groups from the 1990 Census were combined in the 2000 Census and some from the 2000 Census were combined for the 2010 Census. These Block Groups are shown in the **Table 4-1.** The 1990, 2000, and 2010 populations of the block groups are shown in **Table 4-2**.

Figure 4-1: Gulf Coast Parkway Socioeconomic Subareas

Figure 4-2: Gulf Coast Parkway Study Area Census Block Groups

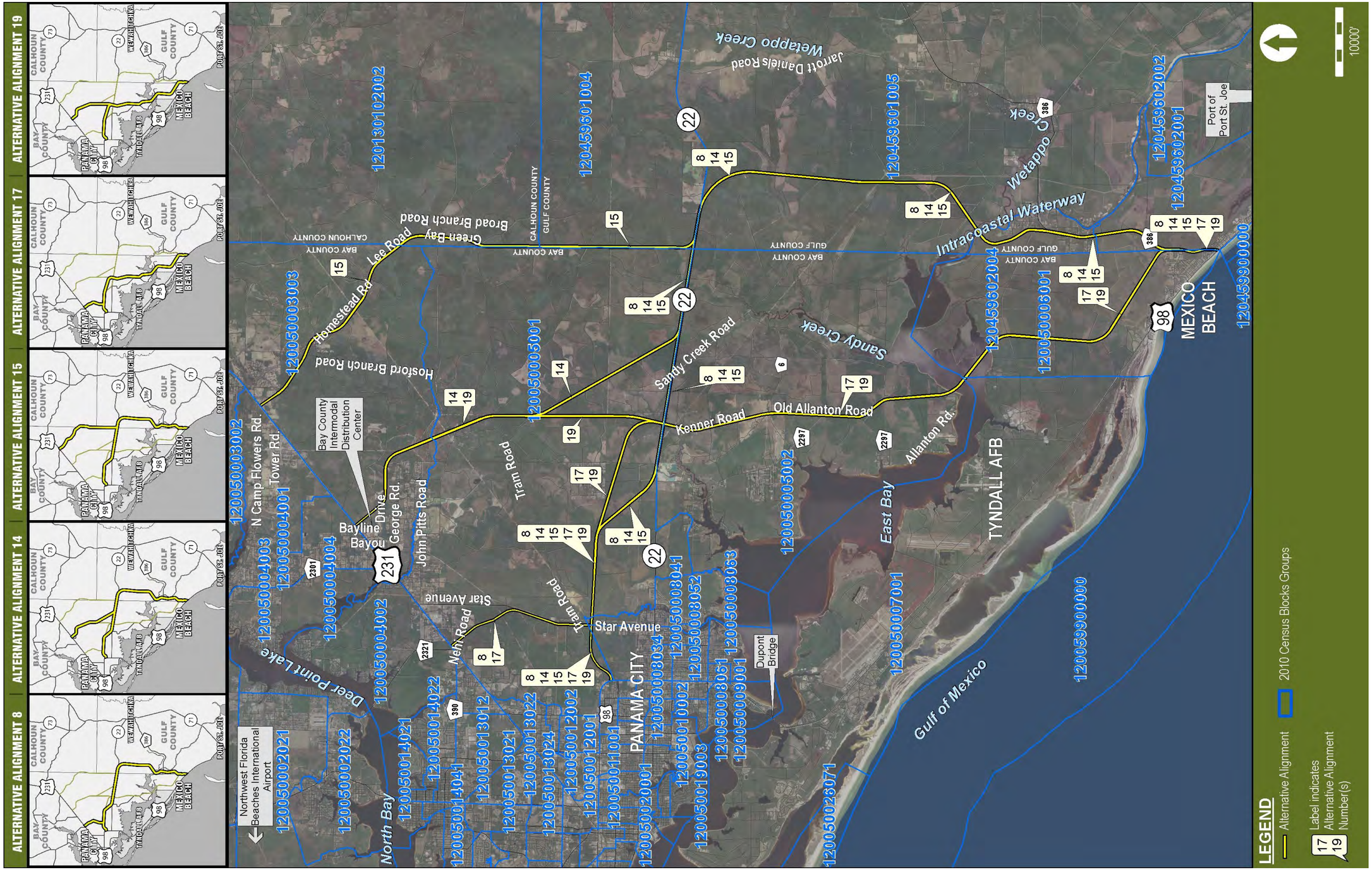


Table 4-1: Gulf Coast Parkway Study Area Census Block Groups

1990 Block Groups	2000 Block Groups	2010 Block Groups
	Bay County	
003004	0003004	0003003
0041 and 0042	0004001	0004002
004004	0004004	0004004 and 004001
0051 and 0052	0005001	0005001
0053	0005002	0005002
0061 and 0062	0006001	0006001
008001	0008011	0008034,0008033, and 0008041
011001	0011001	0011001
011002	0011002	0011002
012001	0012001	0012001 and 0012002
013001	0013001	0013011
	Tyndall Air Force Base (AFB)	
007009	0007009	0007001
	Gulf County	
9601002	9601002	9601004
9601005	9601005	9601005
9602001	9602001	9602001, 9602004, and 9602002
	Calhoun County	
9902003	9902003	0102002

Source: United States Census, census.gov

Table 4-2: Gulf Coast Parkway Study Area Population by Block Group

Year 1990		Year 2000		Year 2010	
Block Group	Population	Block Group	Population	Block Group	Population
		Bay County			
003004	1,048	0003004	2,363	0003003	2,420
0041 and 0042	1,047	0004001	1,559	0004002	1,810
004004	2,659	0004004	3,655	0004004 and 004001	3,978
0051 and 0052	1,803	0005001	2,681	0005001	4,949
0053	793	0005002	1,070	0005002	1,233
0061 and 0062	1,008	0006001	1,017	0006001	1,075
008001	3,020	0008011	3,232	0008034,0008033, and 0008041	5,002
011001	1,415	0011001	1,552	0011001	1,536
011002	1,919	0011002	1,849	0011002	1,500
012001	1,910	0012001	2,815	0012001 and 0012002	3,269
013001	1,044	0013001	1,013	0013011	1,177
Subtotal	**21,984**	**Subtotal**	**25,563**	**Subtotal**	**28,949**
		Gulf County			
9601002	706	9601002	2,094	9601004	1,866
9601005	641	9601005	974	9601005	1,011
9602001	1,501	9602001	1,821	9602001, 9602004, and 9602002	2,366
Subtotal	**2,848**	**Subtotal**	**4,889**	**Subtotal**	**7,443**
		Calhoun County			
9902003	488	9902003	595	0102002	678
		Tyndall AFB			
007009	4,318	0007009	2,757	0007001	2,995
Total	**29,638**	**Total**	**33,804**	**Total**	**40,065**

Source: United States Census, census.gov

The change in population between 1990, 2000 and 2010 block groups was calculated for each block group (**Table 4-3**).

Table 4-3: Population Growth Trend by Block Group

Year 1990		Year 2000		% Change	Year 2010		% Change	% Change
Block Group	Population	Block Group	Population	1990-2000	Block Group	Population	2000-2010	1990-2010
Bay County								
003004	1,048	0003004[1]	1,363	30%	0003003	2,420	77.6%	130.9%
0041 and 0042	1,047	0004001	1,559	49%	0004002	1,810	16.1%	72.9%
004004	2,659	0004004	3,655	37%	0004004 and 004001	3,978	8.8%	49.6%
0051 and 0052	1,803	0005001	2,681	49%	0005001	4,949	84,6%	174.5%
0053	793	0005002	1,070	35%	0005002	1,233	15.2%	55.5%
0061 and 0062	1,008	0006001	1,017	1%	0006001	1,075	5.7%	6.64%
008001	3,020	0008011	3,232	7%	0008034,0008033 and 0008041	5,002	54.8%	65.6%
011001	1,415	0011001	1,552	10%	0011001	1,536	-1.03%	7.9%
011002	1,919	0011002	1,849	-4%	0011002	1,500	-18.9%	-21.8%
012001	1,910	0012001	2,815	47%	0012001 and 0012002	3,269	16.1%	75.2%
013001	1,044	0013001	1,013	-3%	0013011	1,177	16.2%	12.7%
Gulf County								
9601002	706	9601002[2]	794	12%	9601004	1,866	13.9%	38.9%
9601005	641	9601005	974	52%	9601005	1,011	3.8%	57.7%
9602001	1,501	9602001	1,821	21%	9602001, 9602004, and 9602002	2,366	-6.7%	57.6%
Calhoun County								
9902003	488	9902003	595	22%	0102002	678	13.9%	38.9%
Tyndall AFB								
007009	4,318	0007009	2,757	-36%	0007001	2,995	8.63%	-30.6%

Notes:

1. The Bay County Correctional Facility inmate population of 1,000 was removed from the 2000 and 2010 Census Data. See reason below.
2. The Gulf County Correctional Facility inmate population of 1,300 was removed from the 2010 Census Data. See reason below.
3. Source: 2010 United States Census, census.gov

The 2000 Census Block Group 0007009 and 2010 Census Block Group 0007001 are shown separately from Bay County as it encompasses only the Tyndall AFB Reservation. The Tyndall AFB has a unique relationship between its population and employment statistics in that its population is directly related to the jobs available. There is no household unemployment on the Tyndall AFB and the population increases or decreases in direct proportion to the job availability.

Block Groups, such as 0003003 and 9601004 in rural Bay and Gulf Counties, respectively, appeared to have inconsistent growth rates when the raw data (**Table 4-2**) was compared with the population trends of other Block Groups. However, more careful consideration of these Block Groups reveals that both of these Block Groups contain correctional facilities. The Bay County Correctional Facility located in Block Group 003001 was constructed in 1995 and houses approximately 1,000 inmates and provides approximately 250 jobs. Additionally, two subdivisions were platted within that area between 1990 and 2000, Sweet Water Village and Lakewood Manor. Combined, these subdivisions have approximately 250 home sites. The Gulf County Correctional Facility became operational in 1998. At its opening, it housed approximately 1,300 inmates. In 2010, the facility had grown to an inmate population of approximately 3,000 and a staff of over 500. The area surrounding the

facility has seen more development over the last decade as well. The inmate populations were removed from the population growth trends shown in **Table 4-3**. In 2010, Block Groups 0005001 (84.6%) and 0003003 (77.6%) in Bay County showed significant increases in population since the 2000 Census. These areas encompass mostly areas of unincorporated Bay County along US 231. Census 2010 Block Groups 0011001 and 0011002 in Bay County both had losses in population since the 2000 Census. These areas include portions of Springfield, Callaway, and unincorporated Bay County. The 2010 Block Group 9602001/9602004/9602002 in Gulf County also showed a loss between 2000 and 2010. This area includes rural Gulf County near the Bay County boundary. However, overall the population growth between 1990 and 2010 for the study area was 42.4 percent, excluding the prison populations.

Since 1990, the majority of the Block Groups and the area overall have experienced significant growth. Block Group 0003003 in Bay County experienced a growth of 130.9 percent from 1990 to 2010. Block Group 9601005 in Gulf County experienced growth of 57.7 percent and 9602001/9602004/9602002 showed growth of 57.6 percent. Together these block Groups include the western third of rural Gulf County. Tyndall AFB had a 30.6 percent decline in population between 1990 and 2010.

Removing the two correctional facility populations from the data set and averaging the other County Block Groups produce a growth trend of 58 percent in Bay County, 56 percent in Gulf County, and 39 percent in Calhoun County when comparing 2010 data to the 1990 Census data.

The future population within the each subarea was calculated based on the percentage of the 2030 projected population for the census blocks comprising each subarea. The subareas and their calculated 2030 populations are listed in **Table 4-4**.

Table 4-4: Gulf Coast Parkway Socioeconomic Subarea Population

Subarea	2010 Population	2030 Population	Population Change	Percent Change
Bayou George	1,331	2,240	909	68.3%
Panama City Incorporated	92,358	139,709	47,351	51.3%
Tyndall	2,995	3,861	866	28.9%
Mexico Beach	2,246	3,187	941	41.9%
Bay Unincorporated	12,835	13,593	758	5.9%
Wetappo	896	1,012	116	12.9%
Wewahitchka	3,3,34	4,193	859	25.8%
Gulf Unincorporated	3,854	4,749	895	23.2%
Enterprise Zone	396	464	68	17.2%
Total Population	**120,351**	**173,008**	**52,657**	**30.6%**

In order to determine where the future population growth would be located within the subareas and how the project alternatives would affect the distribution of that population, a group of planning professionals were asked to participate in the allocation of the projected future population. The group, known as the Gulf Coast Parkway Delphi Group, so named for the consensus building process (Delphi Technique) utilized, was comprised of local government and private sector planners with intimate knowledge of the study area. On February 24, 2010 the group members were tasked individually with the responsibility of allocating future population in the study area. Utilizing the Delphi Technique, to insure unbiased opinion, the 2030 population was allocated to each subarea for each of the alternative scenarios, including the No Build Alternative.

The No Build Alternative 2030 population for each subarea is presented in **Table 4-5**. For comparison purposes, **Table 4-6** compares the 2030 subarea population for each alternative as predicted by the Delphi Group and the 2030 population estimated for each subarea using the growth trend percentage method. The second column under each alternative is the difference in 2030 population between the two methods. A negative number means the growth trend method predicted a smaller population within the particular subarea than the Delphi Group. It is interesting to note that overall the Delphi group predicted less total population growth in the study area than the growth trend percentage method. The Delphi Group assumed that much of the future population growth anticipated for Bay County will locate to west Bay County where the West Bay Sector Plan is being implemented and the new NWFBIA and industrial park are located, and the proximity of Panama City Beach tourist area.

Table 4-5: No Build Subarea Population Allocation Comparison

Subarea	2010 Subarea Population	2030 Subarea Population by Growth Trend Percentage	2030 Subarea Population by Delphi Group	2030 Subarea Population Difference Between Projection Methods
Bayou George	1,331	2,240	1,957	283
Panama City Inc.	92,358	139,709	130,196	9,513
Tyndall*	2,995	3,861	3,910	-49**
Mexico Beach	2,246	3,187	4,143	-956
Bay Co. Unincorporated	12,835	13,593	14,370	-777
Wetappo	896	1,012	1,097	-85
Wewahitchka	3,3,34	4,193	4,238	-45
Gulf Co. Unincorporated	3,854	4,749	4,904	-155
Enterprise Zones	396	464	1,148	-684
Totals	**120,351**	**173,008**	**165,963**	**7,045**

* Tyndall population is tied to base employment and therefore population cannot be reliably predicted.
** Negative number indicates the growth trend method predicted a smaller 2030 population than the Delphi Group.

The 2030 subarea population for each of the Build Alternatives as developed by the Delphi Group is presented in **Table 4-6**. The Gulf Coast Parkway ICE Assessment Report, along with the discussion of ICE provided later in this section, contains figures showing the locations of the future population growth as allocated by the Delphi Group for the No Build and Build Alternatives.

Table 4-7 compares the 2030 subarea population distribution for the No Build and Build Alternatives.

The project alternatives would share some changes in population trends and have varying effects on growth trends in other areas depending on each alternative's alignment. The expected changes in growth trends are based on determinations made by the Delphi Group. The Delphi Group, which consisted of public and private land use planners familiar with the study area, were assigned the task of determining the most likely locations where the future population would locate under each of the Build Alternative scenarios.

The purpose of this exercise was to determine the location of future growth with and without the project, so that the impacts of the growth as a result of the project alternatives could be determined. Therefore, this exercise consisted of developing maps (**Figures 4-36 through 4-32**) that show and compare the locations of the projected growth for the No Build and the Build alternatives. The Delphi Group utilized future land use maps, land development codes, planning principles, and their knowledge of the study area to determined the locations of development that would occur. Those areas experiencing development in 2030 greater than the 2030 No Build Alternative were evaluated for induced growth impacts, as discussed in Section 4.3.20.

Table 4-6: Comparison of Growth Trend and Delphi Group 2030 Subarea Population Totals

Subarea	2030 Subarea Population by Growth Trend	Alternative									
		8		14		15		17		19	
		2030 Subarea Population by Delphi Group	Difference in Population Forecasts	2030 Subarea Population by Delphi Group	Difference in Population Forecasts	2030 Subarea Population by Delphi Group	Difference in Population Forecasts	2030 Subarea Population by Delphi Group	Difference in Population Forecasts	2030 Subarea Population by Delphi Group	Difference in Population Forecasts
Bayou George	2,240	2,040	200	2,040	200	2,404	-164	2,065	175	2,065	175
Panama City Inc.	139,709	133,144	6,556	133,144	6,556	132,969	6,731	133,144	6,556	133,144	6,556
Tyndell*	3,861	3,910	-49**	3,910	-49	3,910	-49	3,910	-49	3,910	-49
Mexico Beach	3,187	3,452	-265	3,452	-265	3,452	-265	3,280	-93	3,280	-93
Bay Co. Unincorporated	13,593	14,310	-717	14,444	-851	14,777	-1,184	14,444	-851	13,990	-397
Wetappo	1,012	1,776	-764	1,776	-764	1,776	-764	1,150	-138	1,150	-138
Wewahitchka	4,193	4,741	-548	4,741	-548	4,741	-548	3,986	207	3,986	207
Gulf Co. Unincorporated	4,749	4,654	95	4,654	95	4,654	95	5,142	-393	5,142	-393
Enterprise Zones	464	2,896	-2,432	2,896	-2,432	2,896	2,432	2,290	-1,826	2,290	-1,826
Totals	**173,008**	170,923	2,085	171,057	1,951	171,579	1,429	169,411	3,597	168,957	4,051

* Tyndall population is tied to base employment and therefore population cannot be reliably predicted.
** Negative number indicates the growth trend method predicted a smaller 2030 population than the Delphi Group.

Table 4-7: Comparison of Delphi Group Subarea Populations for No Build and Build Alternatives

Subarea	Alternatives										
	No Build	8		14		15		17		19	
	2030 Total Subarea Population	2030 Total Subarea Population	Difference Between No Build Population	2030 Total Subarea Population	Difference Between No Build Population	2030 Total Subarea Population	Difference Between No Build Population	2030 Total Subarea Population	Difference Between No Build Population	2030 Total Subarea Population	Difference Between No Build Population
Bayou George	1,957	2,040	83	2,040	83	2,404	447	2,065	108	2,065	108
Panama City Inc.	130,196	133,144	2,948	133,144	2,948	132,969	2,773	133,144	2,948	133,144	2,948
Tyndall*	3,910	3,910	0	3,910	0	3,910	0	3,910	0	3,910	0
Mexico Beach	4,143	3,452	-691**	3,452	-691	3,452	-691	3,280	-863	3,280	-863
Bay Co. Unincorporated	14,370	14,310	-60	14,444	74	14,777	407	14,444	74	13,990	-380
Wetappo	1,097	1,776	679	1,776	679	1,776	679	1,150	53	1,150	53
Wewahitchka	4,238	4,741	503	4,741	503	4,741	503	3,986	-252	3,986	-252
Gulf Co. Unincorporated	4,904	4,654	-250	4,654	-250	4,654	-250	5,142	238	5,142	238
Enterprise Zones	1,148	2,896	1,748	2,896	1,748	2,896	1,748	2,290	1,142	2,290	1,142
Totals	165,963	170,923	4,960	171,057	5,094	171,579	5,616	169,411	3,448	168,957	2,994

* Tyndall population is tied to base employment and therefore population cannot be reliably predicted.
** Negative number indicates the No Build population is greater in that subarea.

Based on this analysis, the following conclusions were drawn. First, the distribution and amount of projected population growth in the Panama City Incorporated, Mexico Beach, and Enterprise Zone subareas would not be noticeably affected by Gulf Coast Parkway alternatives because the alignments of all alternatives are similar in these areas. The subareas where the future population growth would vary as a result of the different project alternatives are the Bayou George subarea, the Bay County Unincorporated subarea, the Wetappo subarea, the Wewahitchka subarea, and the Gulf County Unincorporated subarea.

Second, according to **Table 4-7**, the population growth in the study area as a result of the Gulf Coast Parkway would exceed the growth without the Gulf Coast Parkway (the No Build) by 2,994 to 5,616 people, depending on the alternative. Where that growth would occur varies according to the alternative. But the single area expected to experience the most growth would be within the Panama City Incorporated subarea where the increase in population over the No Build ranges from 2,773 to 2,948 persons. The second largest area for growth would be within the Enterprise Zone subarea, where the increase in population over the No Build is anticipated to range between 1,142 and 1,748.

Areas where population growth would be less under the build alternatives than under the No Build alternative were less for a variety of reasons. The Delphi Group determined that the primary reason for a loss in projected population would be due to the attraction of new population to the on-going development of the West Bay Area Detailed Specific Area Plan (DSAP), the area's proximity to the new Northwest Florida Beaches International Airport (NWFBIA), and the Panama City Beach tourist area. The West Bay DSAP would accommodate a population of 4,000 to 6,000 persons and the commercial and civic uses necessary to support that population.

4.1.1.2 Civil Rights and Environmental Justice

In February 1994, the President of the United States issued Executive Order 12898 (Environmental Justice) requiring federal agencies to analyze and address, as appropriate, disproportionately high adverse human health and environmental effects of federal actions on ethnic and cultural minority populations and low income populations, when such analysis is required by the National Environmental Policy Act (NEPA)of 1969. An adverse effect on minority and/or low-income populations occurs when: 1) the adverse effect occurs primarily to a minority and/or low-income population; or 2) the adverse effect suffered by the minority and/or low-income population is more severe or greater in magnitude than the adverse effect suffered by the non-minority and/or non-low-income populations. An evaluation of environmental, public health, and interrelated social and economic effects of proposed projects on minority and/or low-income populations is required. All proposed projects should include measures to avoid, minimize, and/or mitigate disproportionately high and adverse impacts and provide offsetting benefits and opportunities to enhance communities, neighborhoods, and individuals affected by these activities.

The 17 environmental justice criteria identified in Executive Order 12898 are: 1) air pollution; 2) noise; 3) water pollution; 4) soil contamination; 5) destruction of manmade resources; 6) destruction of natural resources; 7) diminution of aesthetic values; 8) detriment to community cohesion; 9) diminution of economic viability; 10) detriment to facilities' access – public and private; 11) detriment to services' access – public and private; 12) vibration; 13) diminution of employment opportunities; 14) displacement; 15) traffic congestion and impairment to mobility; 16) exclusion, isolation, or separation; and 17) diminution of Department of Transportation benefits.

In addition to compliance with Executive Order 12898, any proposed federal project must comply with Title VI of the Civil rights Act and other nondiscrimination authorities. Neither FDOT nor this project will deny benefits of, exclude from participation in or subject to discrimination anyone on the basis of race, color, national origin, sex, age, disability or income status. Title VIII of the 1968 Civil Rights Act guarantees each person equal opportunity in housing.

To assess the potential direct and indirect effects on minority and/or low income populations census data was used to identify these populations in accordance with guidelines established by the Council of Environmental Quality (CEQ) report, *Environmental Justice Guidance under the National Environmental Policy Act*[4]. In addition to utilizing census data, alternative alignments that passed through populated areas were further investigated to verify that the presence, or lack, of concentrations of minorities or low income populations.

Potential for Involvement with Minority Populations

Census block groups having high concentrations of minorities were used to initially identify minority communities with which the project could have involvement. High concentrations of minorities are those areas with a minority (or aggregate of more than one minority) population that exceeds 50% of the total population within the affected area, and/or where the area had a meaningfully greater percentage of minority population than in the general population. **Figure 4-3** shows the census block groups with high concentrations of minority populations in relation to the Build Alternatives.

No areas within the study area were found to have minority (non-white) populations exceeding 50 percent. As shown in **Table 4-8**, the largest minority population within the study area is 41 percent. This block group (120459601005) is located in Gulf County and the potential alternatives that would be involved with this block group are Alternatives 8, 14, and 15.

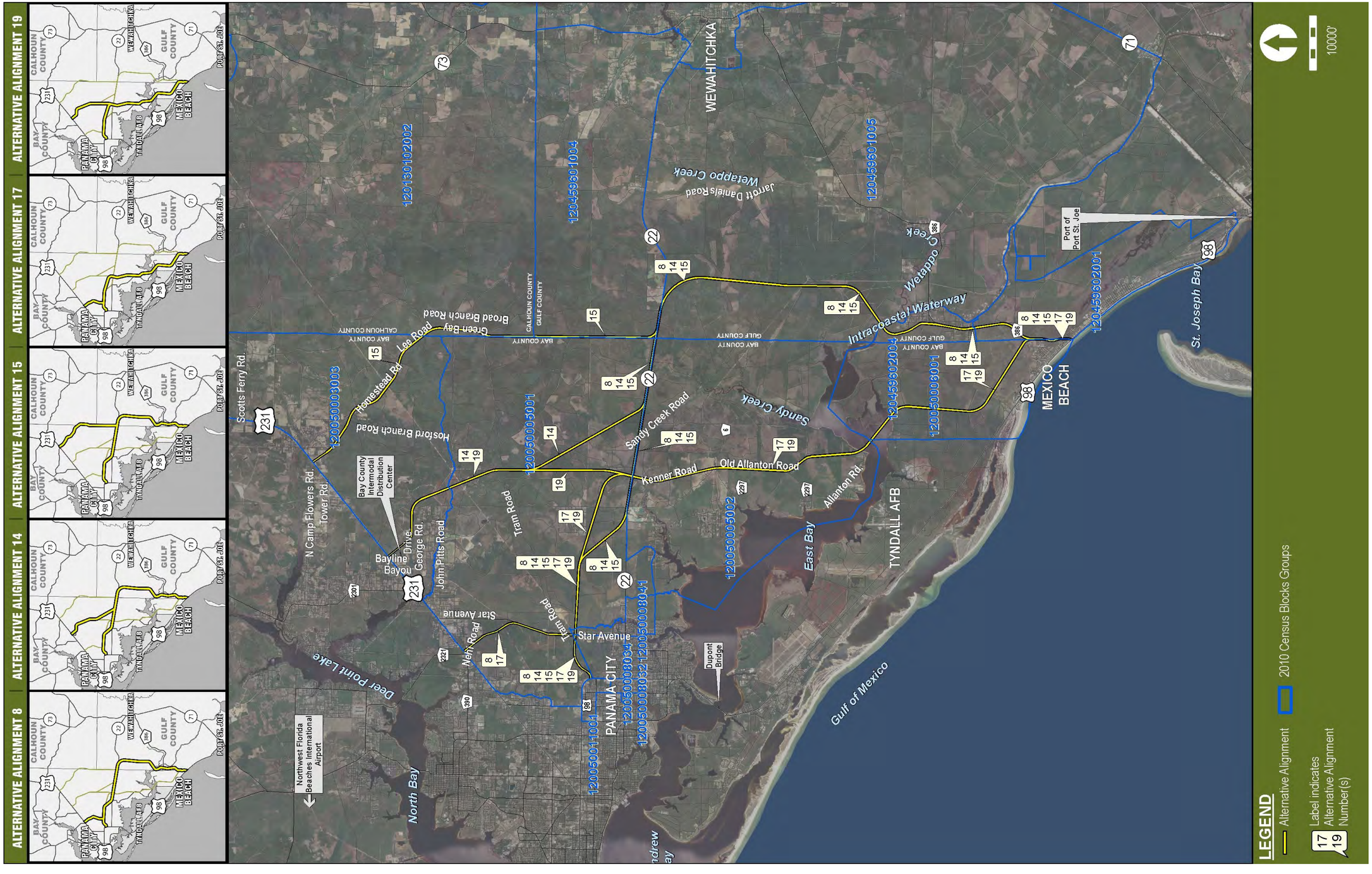
Table 4-8: Minority Population Percentage of Total Population by Block Group

County	Block Group	Alternative Involved	Minority Percentage*
Gulf	120459601004	8, 14, 15	41%
Gulf	120459601005	8, 14, 15	15%
Gulf	120459602001	8, 14, 15, 17, 19	5%
Gulf	120459602004	8,14,15	5%
Bay	120050005001	8, 14, 15, 17, 19	15%
Bay	120050005002	8, 14, 15, 17, 19	8%
Bay	120050006001	8, 14, 15, 17, 19	4%
Bay	120050008034	8, 14, 15, 17, 19	19%
Bay	120050008041	8, 14, 15, 17, 19	19%
Bay	120050011001	8, 14, 15, 17, 19	23%
Bay	120050003003	14, 15, 19	16%
Calhoun	120139902002	15	3%
Bay	120050007001	17	20%

*Source: Census 2010

Federal Highway Administration (FHWA) Order 6640.23 does not specify a numeric method for determining minority populations (i.e. concentrations); it instead uses concepts of geographic proximity, readily identifiable groups, and exposure to similar effects. No areas of readily identifiable groups or clusters of minority persons were identified within the study area. Therefore, none of the alternatives, including the No Build Alternative would have involvement with minority populations. With no minority involvement there can be no disproportionate affect on minorities.

Figure 4-3: Census Block Groups with High Percentage of Minority Populations



Potential for Involvement with Low Income Populations

Census Block Groups with high-concentrations of low-income populations were used to initially identify low-income communities. High concentrations of low-income populations are those that have a meaningfully greater percentage of people in poverty based on the 2010 definition of poverty, and/or the median household income in the block group is 80% or less than the median household income for the county (in 2010 approximately $47,770 in Bay County, $31,699 in Calhoun County, and $39,178 in Gulf County) in which the low-income population is located. **Figure 4-4** shows the census block groups with high-concentrations of low-income populations in relation to the Build Alternatives.

One census block group (Block Group 120459601004) within the study area has below poverty levels of 20 percent or more of the total population. Two other Block Groups were close to the 20 percent threshold. Block Group 12005008034, located in Bay County, has 19 percent of its population below poverty levels, while Block Group 120139902002, in Calhoun County, has 19 percent of its population below poverty levels. **Table 4-9** provides the poverty level percentages by block group.

Table 4-9: Below Poverty Level Population Percentage of Total Population by Block Group

County	Block Group	Alternative Involved	Below Poverty Level Percentage*
Gulf	120459601005	8, 14, 15	6%
Gulf	120459601004	8, 14, 15	46%
Gulf	120459602001	8, 14,15	1%
Gulf	120459602001	8, 14, 15, 17, 19	12%
Bay	120050005001	8, 14, 15, 17, 19	5%
Bay	120050005002	8, 14, 15, 17, 19	4%
Bay	120050006001	8, 14, 15, 17, 19	10%
Bay	120050008034	8, 14, 15, 17, 19	19%
Bay	120050008041	8, 14, 15, 17, 19	1%
Bay	120050011001	8, 14, 15, 17, 19	12%
Bay	120050003003	14, 15, 19	7%
Calhoun	120139902002	15	19%
Bay	120050007001	8, 17	6%

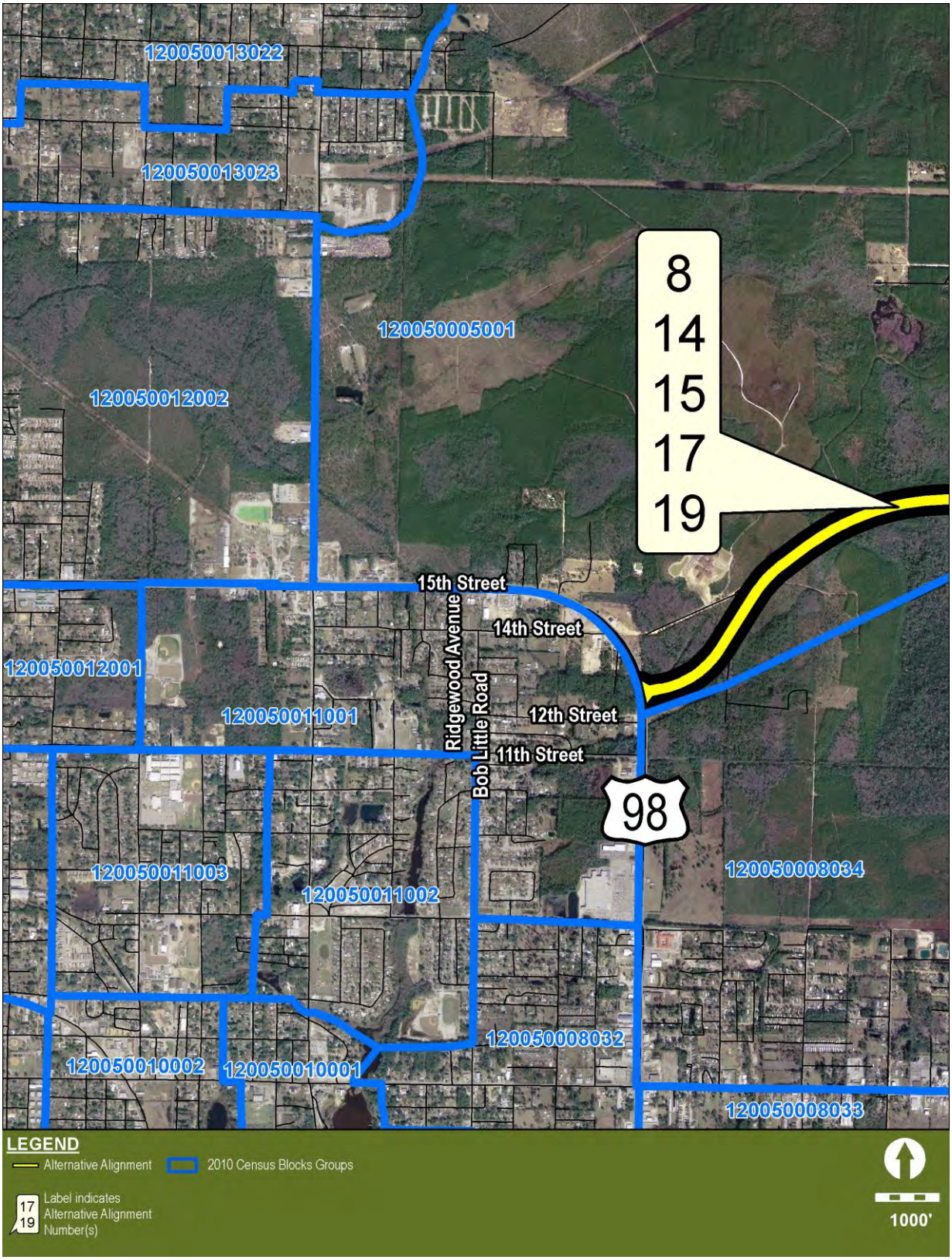
*Source: Census 2000

The No Build Alternative would have no involvement with low-income populations. All the Build Alternatives would have involvement with Block Group 120050008034 where the project terminates at US 98 (Tyndall Parkway). Alternatives 8, 14, and 15 abut Block Group 120459601004 in Gulf County and Alternative 15 would have involvement with Block Group 120139902002 in western Calhoun County. The census block groups were evaluated further to determine whether low income populations would be affected by the Build Alternatives.

There were areas within Block Group 120050011001 (**Figure 4-5**), near where the Build Alternatives would terminate at US 98 (Tyndall Parkway), that were found to contain neighborhoods of potentially low income populations. Commercial properties are located adjacent to US 98 (Tyndall Parkway) in the vicinity of 14th and 15th Streets and along 15th St. until Ridgewood Avenue. From Ridgewood Avenue west to Lucky Lane there is an

Figure 4-4: Census Block Groups with High Concentrations of Low-Income Populations

Figure 4-5: Census Block 120050011001 in the Vicinity of the Gulf Coast Parkway Terminus at US 98 (Tyndall Parkway)



area of single family residences that populate the area from 15th Street (US 98) to 14th Street. From Lucky Lane west, the residential area transitions to commercial then to school property at the western boundary of the block.

A second residential area occurs along 14th Street. It consists of a strip of seven parcels on the north side of 14th Street and seven parcels on the south side of 14th Street a little further to the east of the residences on the north side of 14th Street.

A search of the property appraiser records indicates that the assessed value of the residential properties in the Ridgewood Avenue area is generally between $100,000 and $150,000 with values declining somewhat to the west. Based on the property values of the residences in this community, it was determined that this community was not a low-income population. The residential area along the north side of 14th Street have an assessed value of $50,000 or less, while the property values on the south side of 14th Street have a somewhat higher assessed value in the general range of $50,000 to $100,000 with most properties in the $60,000 to $70,000. Based on the assessed values along 14th Street, it was assumed that this area was a potential low-income community.

Another residential area is present along 12th Street from Bob Little Road to just before Tyndall Parkway. Property values decline the further west along 12th Street. Near the intersection of Bob Little Road and 12th Street there is a trailer park that appears to be low income. Housing of similar values are also found along 11th Street.

All these residential areas are located away from the project terminus with US 98 (Tyndall Parkway) and would not be directly affected by the project.

The same type of analysis was conducted for Block Group 120459601004 in Gulf County **and** Block Group 1201399902002 in Calhoun County. Census Blocks 4025, 4026, 4035, 4036, 4037, 4038, 4039, and 4042 in Block Group 120459601004 and Census Blocks 3228, 3230, 3242, and 3244 in Block Group 1201399902002 were reviewed for low income populations. Census data for these blocks revealed no people residing in any of these blocks. Therefore, Alternative 8, 14, and 15 would have no affect on low-income populations.

The project alternatives would have minimal impacts on any community/population group. The greatest effects experienced would be by those residences that would be displaced by some of the project alternatives; however, there is no case where the project effects, including the relocations, represent a disproportionate impact to any specific community as compared to the surrounding, or adjacent, communities.

The proposed project will not result in any disproportionate adverse impacts to any identified minority, ethnic, elderly or handicapped groups and/or low-income households. Title VI/Nondiscrimination information will be made available at the public hearing and on the project website.

4.1.1.3 Community Cohesion

Community cohesion is an urban planning term that generally refers to the quantity and quality of interactions among people within a neighborhood or community. Impacts of transportation projects on community cohesion may be positive or negative. A negative impact on community cohesiveness occurs when a project splits a neighborhood or isolates a portion of a neighborhood or ethnic group or separates residents from their community facilities. A positive effect occurs when a transportation project contributes to improving the cohesiveness of a community by enhancing accessibility or improving walk ability.

Although the majority of the project area is agricultural, undeveloped land, there are communities of varying size and character within the study area. As discussed, the study area has been divided into six subareas having similar community characteristics (**Figure 4-1**).

During the development of alternatives, the study team attempted to avoid or minimize impacts to the abutting communities. The potential direct effects of the project alternatives on community cohesion vary depending on the alternative being considered and depending on the implementation of other planned transportation projects. The potential for the Build alternatives to affect community cohesion within each subarea has been evaluated. The only subareas where there may be potential effects on community cohesion are within the Mexico Beach, the Wetappo, and the Panama City Incorporated subareas (refer to **Figures 4-8, 4-10,** and **4-7**, respectively). The potential effects on community cohesion are described and offsetting measures identified in the discussion that follow.

Mexico Beach Subarea

The Mexico Beach subarea is comprised of two adjacent communities: Mexico Beach and St. Joe Beach (which includes the Beacon Hill subdivision). County Road (CR) 386, which currently splits the two communities, serves as the eastern limit of Mexico Beach and the western limit of St. Joe Beach. All of the Gulf Coast Parkway Build Alternatives utilize CR 386 from its intersection with US 98 northward to beyond both communities' northern boundary. Therefore, all the Build Alternatives, which would widen existing CR 386, would have no effect on either community's internal cohesion, but would have the potential to affect any cohesion between the two communities by widening the divide.

The City of Mexico Beach is considered to have strong community cohesion. The population is small enough (1,017) to allow for close personal relationships. The area is densely populated with parks and community facilities, as well as the public beach. In Mexico Beach, all of the proposed alternatives would widen existing CR 386. Being on the city limits, none of the alternatives would split neighborhoods or isolate segments of the community from other segments of the community; therefore, none of the alternatives would have a negative effect on the city's community cohesion.

In fact, all of the Build alternatives have the potential to enhance the community cohesion by rerouting some of the through traffic on US 98 away from the city. Less through traffic on US 98 would provide safer pedestrian access across US 98, which would reduce the division between the beachside and landward side of the city, as well as reduce noise levels in the community.

Beacon Hill/St. Joe Beach, which has a population approximately half that of the City of Mexico Beach, lacks the number of community facilities present in Mexico Beach, but is still a cohesive community. All the Build alternatives are located west of the community and would not split neighborhoods or isolate segments of the community from other segments. However, the increased traffic and wider typical section of the Gulf Coast Parkway (CR 386) would have the potential to further separate the Beacon Hill/St. Joe Beach community from the City of Mexico Beach. This impact would be offset with the provision of pedestrian facilities, signalized crosswalks, and pedestrian refuge areas within the median.

US 98 through Beacon Hill/St. Joe Beach, unlike US 98 through Mexico Beach, would not experience a decrease in traffic solely as a result of the Gulf Coast Parkway alternatives and may experience an even greater increase in traffic than projected. The Gulf Coast Parkway is expected to provide an economic stimulus for Gulf County. Depending on where future business development occurs, the use of US 98 through Beacon Hill/St. Joe Beach to reach the Gulf Coast Parkway could result in increased traffic on both roadways. However, construction of the planned Segment 2 of the proposed Gulf to Bay Highway would divert some of the through traffic utilizing US 98 in Beacon Hill/St. Joe Beach, also reducing the traffic utilizing the segment of CR 386 between US 98 and the proposed Gulf to Bay Highway (**Figure 4-6** shows the Gulf to Bay Highway bypassing the Mexico Beach/Beacon Hill/St. Joe Beach area and the area of overlap between the Gulf to Bay Highway and the Gulf Coast Parkway alternatives). At this time the planned construction of Segment 2 of the Gulf to Bay Highway project is unknown. However, should this construction occur before construction of the Gulf Coast Parkway Segment 7 (widening CR 386 from its intersection with US 98 to the CR 386/Gulf to Bay Highway intersection),

Figure 4-6: Gulf to Bay Highway Segments 2 and 3 with Gulf Coast Parkway Alternatives

the diversion of through traffic provided by the Gulf to Bay Highway Segment 2 would eliminate the need for widening of CR 386 (Segment 7 of the Gulf Coast Parkway). The reduction of through traffic on US 98 through Beacon Hill/St. Joe Beach would have the same benefits as the reduction in traffic on US 98 in Mexico Beach.

Although the project alternatives have the potential to widen the gap between Mexico Beach and Beacon Hill/St. Joe Beach due to the wider typical section, the provision of pedestrian facilities, signalized crosswalks, and pedestrian refuge areas within the median would offset the greater separation. Further, the construction of Segment 2 of the Gulf to Bay Highway prior to the Gulf Coast Parkway would negate the need for widening of CR 386 thereby preventing the potential loss of cohesion between Mexico Beach and St. Joe Beach.

Wetappo Subarea

Development within the Wetappo subarea (**Figure 4-10**) is concentrated along CR 386. The center of the community is in Overstreet to the west and north of the Overstreet Bridge. The only Build Alternatives having the potential for involvement with the Overstreet community are Alternatives 8, 14, and 15. All three alternatives utilize the existing CR 386 alignment to approximately 0.5 mile north of Sunshine Road where CR 386 begins a ninety degree turn to the east to cross over the Intracoastal Waterway (ICWW). From there, the alternatives proceed north on new alignment skirting the western edge of the Overstreet community.

The segment of CR 386 utilized by Build Alternatives 8, 14, and 15 passes through developed areas south of the Overstreet community. These neighborhoods, while already separated by CR 386, would experience a greater sense of separation due to the wider typical section and increased traffic. However, this sense of separation would be offset by the provision of pedestrian and bicycle facilities, crosswalks, and pedestrian refuge areas within the median.

All alternatives would improve community cohesion in Overstreet proper by reducing traffic on the segment of CR 386 that turns east to cross the ICWW and, allowing for safer pedestrian access across CR 386, both through the provision of crosswalks, but also through a reduction in through traffic. The ICWW can be accessed by local roads on either side of CR 386 and access would not be impacted by the proposed alternatives.

Panama City Incorporated Subarea

The only community within the Panama City Incorporated subarea to experience a direct effect from any of the Build Alternatives is Springfield. All Build Alternatives utilize Tram Road to connect to US 98 (Tyndall Parkway) in Springfield. Tram Road traverses mostly undeveloped rural land except for a few businesses where it connects to US 98 (Tyndall Parkway). The intersection with US 98 (Tyndall Parkway) would require the relocation of WaterSound Apartments, but would not split the community or result in the isolation of segments of the community. Therefore, none of the Build Alternatives would have an adverse effect on community cohesion within Springfield.

Table 4-10 summarizes which of the Build Alternatives have the potential to affect community cohesion within any of the subareas.

Table 4-10: Gulf Coast Parkway Build Alternatives' Potential Effect on Community Cohesion

Subarea	Alternatives				
	8	14	15	17	19
Mexico Beach Subarea	Yes	Yes	Yes	Yes	Yes
Panama City Incorporated	No	No	No	No	No
Tyndall Subarea	No	No	No	No	No
Wetappo Subarea	Yes	Yes	Yes	No	No
Wewahitchka Subarea	No	No	No	No	No
Bayou George Subarea	No	No	No	No	No

As evidenced by **Table 4-10**, community cohesion of the Mexico Beach subarea and the Wetappo subarea may be subject to potential impacts. All of the Build Alternatives have the potential to affect community cohesion within the Mexico Beach subarea. Although the Mexico Beach (northwest) side of CR 386 is already separated from the St. Joe Beach (southeast) side, the separation is limited to the width of the two-lane roadway. With the Build Alternatives (assuming the Gulf to Bay Highway is not constructed which would necessitate the widening of CR 386 from US 98 to the north), CR 386 would be widened to four-lane divided facility with sidewalks, bike paths, and shoulders. This widened typical section and increased traffic would provide more of a separation between the two communities. It is proposed to offset the impact of the increased separation between Mexico Beach and St. Joe Beach by the provision of crosswalks and pedestrian refuge areas along CR 386.

Alternatives 8, 14, and 15 could also potentially affect community cohesion within the community of Overstreet (in the Wetappo subarea). Alternatives 8, 14, and 15 follow CR 386 to Overstreet where it departs from the existing alignment to follow new alignment. The segment of the Gulf Coast Parkway that follows CR 386 would provide a wider typical section than currently exists increasing the separation between the residential areas on both sides of the road. Therefore, it is proposed to offset the increased separation in the area just south of Overstreet with the provision of crosswalks and pedestrian refuge areas.

As described above, the community cohesion impacts are minor and due to widening of existing roads. Public opinion regarding the effect of the project on their community was that the benefits outweighed the impacts. The proposed improvements would not split communities or isolate segments of a community from other parts of that community. The affects of the greater separation between existing communities on either side of the Gulf Coast Parkway would be offset with the provision of crosswalks and pedestrian refuge areas.

4.1.1.4 Community Facilities and Services

None of the Build Alternatives would have direct involvement with any community facilities listed in **Section 3.1.3** and shown on **Figure 3-2**. There may be some temporary delays in the delivery of public services during construction, but these will be handled with the use of the FDOT *Standard Specifications for Road and Bridge Construction* and coordination with public service providers before road closures.

All community facilities and the provision of community services, especially emergency services, would benefit from the improved access provided by the proposed project. Further, the delivery of emergency services such as fire and ambulance, when US 98 is closed to through traffic, would be greatly enhanced by the much shorter detour provided by Gulf Coast Parkway.

4.1.1.5 Safety

Analysis of the safety concerns on existing roads in the Gulf Coast Parkway study area was done with crash data from FDOT for the years of 2005-2009. Historical crash data[5] indicates safety deficiencies exist at specific locations within the project area. The discussion below summarizes the crash data for existing major roads and intersections in the study area.

- US 98 at CR 386

  From 2005-2009, a total of 11 accidents and one fatality took place within a mile of the US 98 and CR 386 intersection. Statistics have shown that 82 percent of these accidents were two-car collisions. This location is not a signalized intersection.

- State Road (SR) 22

  A total of 32 accidents and one fatality occurred on SR 22 within the project area between the years of 2005-2009. Of these, nine of these accidents involved two car accidents and none were located at signalized intersections.

- US 231

  A total of 158 accidents were recorded along US 231 between the years of 2005-2009. Of these, four resulted in fatalities.

In addition to FDOT crash data, the *Bicycle and Pedestrian Plan: Technical Memorandum 2: Existing Conditions Report*[6] for Bay County indicated that for the period from 2002 to 2004, bicycle fatalities accounted for 3 percent of all bicycle crashes and pedestrian fatalities accounted for 11 percent of all pedestrian crashes within the Bay County Transportation Planning Organization's (TPO) planning area. This statistic is higher than the statewide percentage for the same time period. Two percent of all bicycle crashes statewide and six percent of all pedestrian crashes statewide resulted in fatalities.

The No Build Alternative would not provide any improvement in the safety of motorists, pedestrians, or bicyclists beyond implementation of currently planned pedestrian facilities (discussed in **Section 3.3.6** of this report).

The Gulf Coast Parkway Build alternatives would improve traffic and pedestrian safety by providing signalized intersections at all major intersections along the Gulf Coast Parkway alternatives. Turning lanes and other safety features will enhance the safety of motorists. Further, the typical section for the proposed improvements would improve traffic safety by providing a median between opposing lanes of traffic. The redirection of traffic from heavily congested roads would likely reduce the potential for crashes on those roads as well. The provisions of sidewalks and bicycle lane in urban areas and a multi-use trail in rural areas will reduce the potential for collisions with pedestrians and bicyclists. All Build Alternatives would improve emergency response times by providing a less congested and shorter route for emergency vehicles. There are no significant differences among the Build Alternatives that provide justification for the selection of one alternative over another in regards to traffic safety.

4.1.2 Economic Effects

After ETAT review of the project in EST, the FHWA responded with the following comments concerning economic effects (comment and response presented in Appendix I):

- *Consideration should be made of the needs of the population with disabilities along the alternatives, as well as expansion of transit services.*

There are no existing or planned public transit services in the study area. There are, however, transportation disadvantaged services available for disabled and other transportation disadvantaged populations. The proposed project would not prevent access to this service, and may enhance service trip times if the service utilizes the proposed project. In addition, the proposed project will be designed and constructed in accordance with the Americans with Disabilities Act Accessibility Guidelines to ensure accessibility of pedestrians and other non-motorized populations have access to the proposed facility.

The purpose and need statement (Section 1.4.1) for this project identified the inclusion of Gulf County in the designation of the Northwest Florida Area of Critical Economic Concern as evidence of the need for economic stimulus in the study area. Section 3.2 of this report discusses the considerable difference in the economic conditions that exist between Gulf and Bay Counties.

How then does a transportation project influence an area's economic health? A transportation network provides mobility and access within and without a region. If the transportation network is incomplete or is missing vital links, it is reflected in the local economy in variety of ways, such as high unemployment, higher costs for goods and services, and so forth. A review of Gulf County's transportation network reveals two, two-lane east-west highways (US 98 and SR 22), a two-lane north-south highway (SR 71) near the eastern county line, and a county maintained two-lane highway (CR 386) that connects US 98 with SR 71. Of these facilities, only SR 71 and US 98 connect to other highways beyond the study area. SR 71 connects to I-10 in Jackson County and US 98 travels between Tallahassee to Pensacola.

The Gulf Coast Parkway was proposed to provide a missing link in this transportation network, a connection to the four-lane US 231. It would also connect to US 98 (Tyndall Parkway) and improve access to other modes of transportation (NWFBIA, the Port of Port St. Joe, and to proposed intermodal transfer facilities on US 231). From an economic perspective, this improvement in the highway network would also improve mobility which results in reduced travel times for freight transport and to and from employment and shopping centers.

This section describes the project's potential to facilitate investment within the study area. The analysis is divided into two parts: Section 4.1.2.1 addresses the project's potential effects of regional consequence and Section 4.1.2.2 assesses the potential for economic stimulus within the subareas.

4.1.2.1 Regional and Project Effects

The No Build Alternative which makes no transportation improvements has already proven to be inadequate for stimulating economic growth in Gulf County. With only three highways serving Gulf County and none of them providing a four lane facility, the transport of freight between Port St. Joe and US 231 to I-10 or the Northwest Florida Beaches International Airport (NWFBIA) will continue to discourage investment in the county. Without easy access to the beaches, the desired growth in the tourism industry will continue at a slow pace compared to other areas along the coast. The No Build Alternative is not consistent with the planning goals of the local and regional governments that recognize the need to provide the necessary infrastructure that connects the County to the regional, national, and global economy as a prerequisite to improving the economic climate and making the County competitive (see Chapter 11, Policy 1.10 of the *Gulf County Comprehensive Plan*).

According to *Transportation as Catalyst for Community Economic Development*[7] (2007), "There are two ways in which transportation projects, appropriately designed, can promote community economic development:

1) By providing access to jobs, services, and shopping areas for transit-dependent communities, and
2) By providing a catalyst for or support of associated economic development."

Transportation projects often promote economic development and results in the utilization of unused or underused resources in the production of goods and services such that the overall benefits exceed the overall project costs over time[6].The proposed Gulf Coast Parkway is an approximately 30 to 40-mile long project in a mostly rural area that contains too little population density to support transit. However, the project includes elements that will improve access to jobs, services, and shopping areas, and provide pedestrian and bicycle facilities for people without motorized transportation. Therefore, the principal economic aspect of the Gulf Coast Parkway is its ability to serve as a catalyst for economic development.

The region has a number of weaknesses that will need to be mitigated to have a truly vibrant economy, but it also has strengths and opportunities which can be exploited to begin building a regionally sustainable economy.

The Apalachee Regional Planning Council (RPC) in their *Comprehensive Economic Development Strategy Report*[8], found the region especially deficient in its manufacturing base and in need of expanded capacity in transportation and warehousing, which are fundamental building blocks of a diverse economy.

As a result, the Apalachee RPC has identified eight vitally strategic projects of regional significance within the region to be pursued. Of these, two are specifically targeted for the City of Port St. Joe, one is specifically targeted for Calhoun County, and one could be developed in any county within the region. The location specific projects are: the development of the Port St. Joe Deepwater Port, the development of the Calhoun County Industrial Park, and the development of a Regional Advanced Medical Facility in Port St. Joe. The one non-site specific project is the development of a second alternative fuels processing facility.

Of the aforementioned regionally significant projects, the Gulf Coast Parkway would provide benefits to two and possibly three of the facilities.

- The re-opening of the Port of Port St. Joe as a deepwater port represents an opportunity to create an intermodal transfer facility with access to the ICWW and the open ocean as well as rail and highway access to the north. The proposed Gulf Coast Parkway would benefit the operation of the Port of Port St. Joe by reducing travel times to US 231, providing access to the Panama City Port Authority's Intermodal Transfer Facility, and by providing a more direct connection to the NWFBIA in Panama City. Given that the Apalachicola Northern Railroad is currently only operating two times a week, the presence of a high-speed, four-lane highway in an area having no comparable transportation facility would increase the attractiveness of utilizing the Port of Port St. Joe, increasing the likelihood of the port's re-opening.
- A Regional Advanced Medical Facility in Port St. Joe would benefit from the Gulf Coast Parkway in reduced emergency response times and improved access to remote areas.
- Should a second alternative fuels processing facility be located in the Port St. Joe – St. Joe Beach area, it would also benefit from the access provided by a high-speed, four-lane facility in the delivery of fuel to the facility.

Besides the benefit to these specific regionally significant projects, the Gulf Coast Parkway would provide a missing link in the transportation network of Gulf County which would improve freight access to I-10 via US 231. Alternatives 8, 14, and 15 have the most benefit to the Gulf County enterprise zones through the greater length of CR 386 traveled by these alternatives (greater enterprise zone access to the Gulf Coast Parkway) and the connection to the enterprise zone in the Overstreet area, which Alternatives 17 and 19 do not have. However,

Alternatives 17 and 19 utilize an alignment that traverses Allanton Point in the vicinity of an existing shipbuilding site that would benefit from the improved connection to US 231.

In addition to the specific regionally significant projects and the new link in the freight transportation network, the Gulf Coast Parkway project would benefit the local tourism industry. The study area has an abundance of shoreline from which both fresh and salt water can be accessed for just about any activity that involves water. Of the many tourist sites, St. Joseph's Peninsula State Park draws the most out-of-state visitors.

In recent years the tourism count has declined due to the effects of the hurricane seasons of 2004 and 2005 and the dramatic increases in fuel costs following those hurricane seasons. Another economic set-back emerged with the April 10, 2010 off-shore drilling accident that occurred approximately 175 miles southwest of the project area. Although it is too early to determine the effect this accident will have on tourism in southeast Bay and Gulf counties, there have been reports of cancellations of reservations throughout the Florida Panhandle leading to fears that the area will suffer from even further decreases in tourism, especially from out-of-state visitors.

Construction of the Gulf Coast Parkway will not solve the problems induced by environmental disasters, but it would benefit the tourism industry of southeast Bay and Gulf counties by providing out-of-state visitors a bypass of the heavily-traveled areas of US 231 and US 98 through Panama City, Springfield, Callaway, Parker, and Tyndall AFB, thereby reducing travel times and providing more direct access to the beaches. The Gulf Coast Parkway would also promote the Apalachee RPC goal of developing ecotourism in the region by providing improved access and reduced travel times to areas where ecotourism is being offered.

It should be noted that increased tourism as a result of the project may have some associated environmental impacts. Tourism development can put pressure on natural resources through consumption of resources that may be in limited supply such as freshwater. Then there is the potential for impacts to the ecosystems of the region by construction activities and infrastructure development supporting tourism. Typical tourist developments include hotels and resorts to house tourists, recreational activities such as golf courses and marinas, and support facilities such as restaurants and shops. There is also the potential for environmental impacts from the tourist themselves, if they arrive in too great a number. Tourists trample sensitive vegetation, especially in marine ecosystems as it is the sensitive interface between land and open water that often gets the most use. Even ecotourism has the potential to impact wildlife. Too much contact with humans may stress wildlife causing them to alter their natural behavior such as feeding and/or breeding patterns. Changes in feeding and breeding may reduce the numbers of offspring produced and reduce the overall numbers of the species, potentially affecting other species.

It is difficult to predict the amount of tourism that is likely to occur as a result of the project. The improved access to the St. Joe Beach/Mexico Beach area would certainly attract some visitors to the area that might otherwise go elsewhere, but the St. Joe Beach/Mexico Beach area would still be competing with more established tourist destinations such as Panama City Beach for tourists traveling to northwest Florida.

4.1.2.2 Another consideration is the tourist carrying capacity of the area.

Although the tourist carrying capacity of the St. Joe Beach/ Mexico Beach area has not been studied, it is reasonable to assume, due to its traditionally low volume of tourist traffic, that the area has not reached its tourist carrying capacity. Because of the recent declines in tourism experienced in the coastal areas of Gulf County, and the presence of more established tourist areas nearby, any initial project induced tourism in the St. Joe Beach/Mexico Beach area is not likely to create negative environmental effects. If the local communities, or Gulf and Bay Counties, identify the area's carrying capacity then develop and implement a sustainable tourism plan, there is reason to believe that over the long term, increased tourism can be accommodated in the St. Joe Beach/Mexico Beach area without serious harm to the region's environmental resources.

4.1.2.3 Potential Economic Effects within Socioeconomic Subareas

Local economic effects of a transportation project are typically the result of access changes, according to the FDOT *Community Impact Assessment Handbook*[9] Changes in access can include providing new or improved access to an area, or conversely redirecting traffic around or away from an area. Changes in access can also be the result of access management measures incorporated as part of the design of a transportation improvement. These types of access changes may be perceived as beneficial or detrimental depending on the location of existing businesses in relation to the transportation improvements.

Generally, all the Build Alternatives have the potential to affect accessibility to existing businesses and could affect decisions regarding the location of future business enterprises. As shown on the subarea Future Land Use maps (**Figures 4-7 through 4-13)**, property designated commercial, industrial, or retail occurs at the following: locations:

- US 98 in St. Joe Beach
- Beachside of US 98 in Mexico Beach
- Tram Road and US 98 (Tyndall Parkway) in Springfield
- US 98 (Tyndall Parkway) in Callaway and Parker
- Star Ave. east of Cherokee Heights/Nehi Rd. intersection
- Bay County Industrial Park on US 231
- West side of US 231 from CR 2301 to Bay Line Dr.
- US 231 from Johnny Lane north to Camp Flowers Rd.

The study team used the subareas to evaluate the local economic effects of the Gulf Coast Parkway alternatives. This evaluation considered potential development at intersections/interchanges which have a strong influence on the type and location of economic development. In addition, the potential effects of the Build Alternatives on existing businesses and commercial and/or industrial development within each subarea has been evaluated and is summarized in the following sections.

Bayou George Subarea

The potential for economic growth in the Bayou George subarea will be concentrated around the new intersections of the Gulf Coast Parkway alternatives with US 231. Of the two Gulf Coast Parkway intersections with US 231 in this subarea (Alternatives 14, 15, and 19) the Build Alternatives having the most potential for economic development is the Alternative 14/Alternative 19 intersection with US 231 which is located in the vicinity of Bay Line Drive near the Bay County Intermodal Distribution Center. The intersection of Alternative 15 with US 231 is the furthermost north of the alternatives and is located in a mostly rural area. Therefore, the economic development likely to occur at this intersection is principally of the gas station/convenience store type. Whereas, the US 231 intersection with Alternatives 14/19, being in an industrial area, are more conducive to the same type of development. Although the Delphi Group felt population growth originally predicted for this area would be diverted to the new West Bay Sector planning area, the potential for additional industrial development associated with Alternatives 14 and 19 would improve employment opportunities and possibly offset the out-migration of the population.

Panama City Incorporated Subarea

There may be some concern from existing businesses along US 98 (Tyndall Parkway) that the Gulf Coast Parkway would cause a decline in their business due to the redirection of traffic from US 98 (Tyndall Parkway) to the Gulf Coast Parkway. In actuality, the affect on businesses along US 98 (Tyndall Parkway) should be minimal, for the following reasons:

Figure 4-7: Bayou George Subarea Future Land Use Map

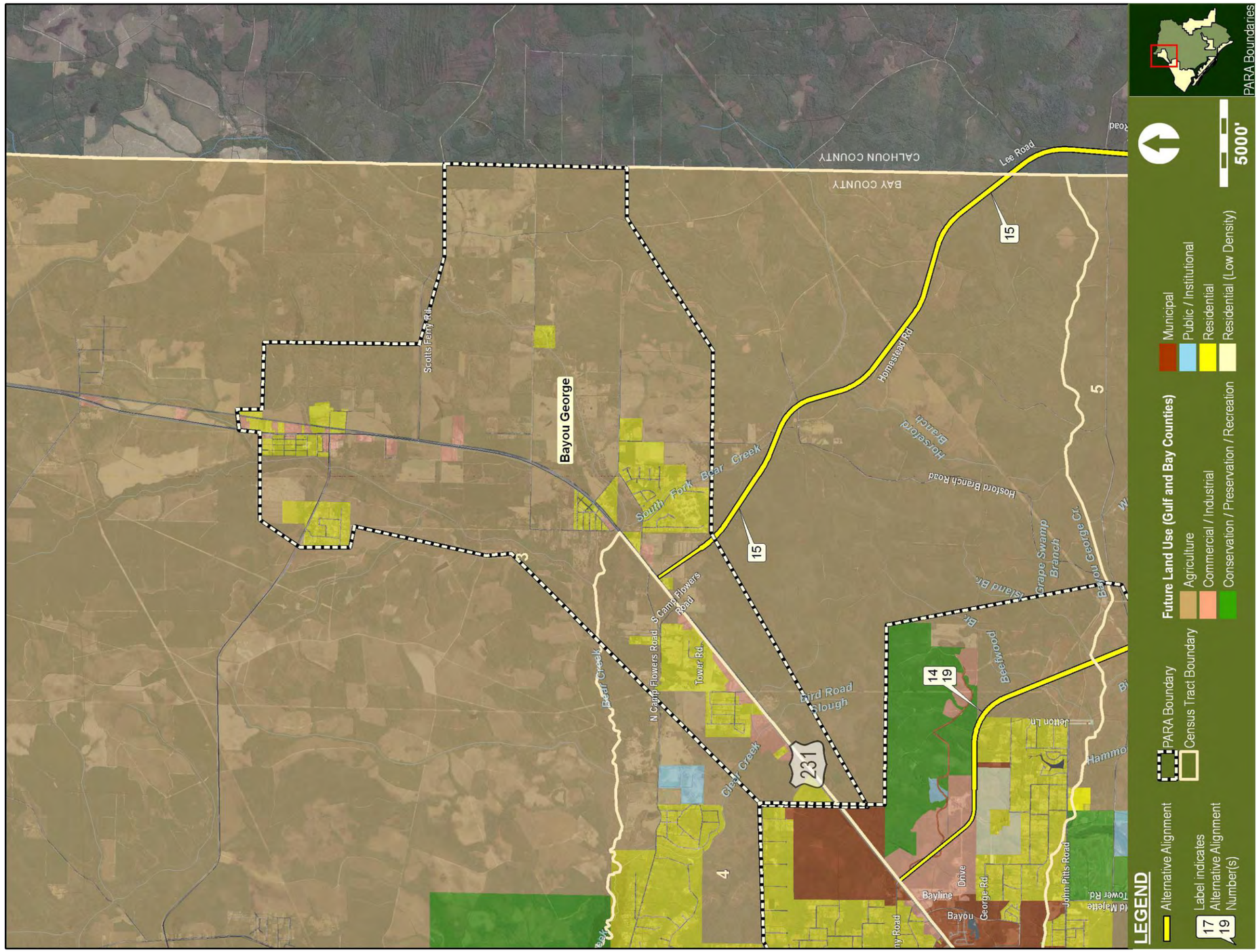


Figure 4-8: Panama City Incorporated Subarea Future Land Use Map

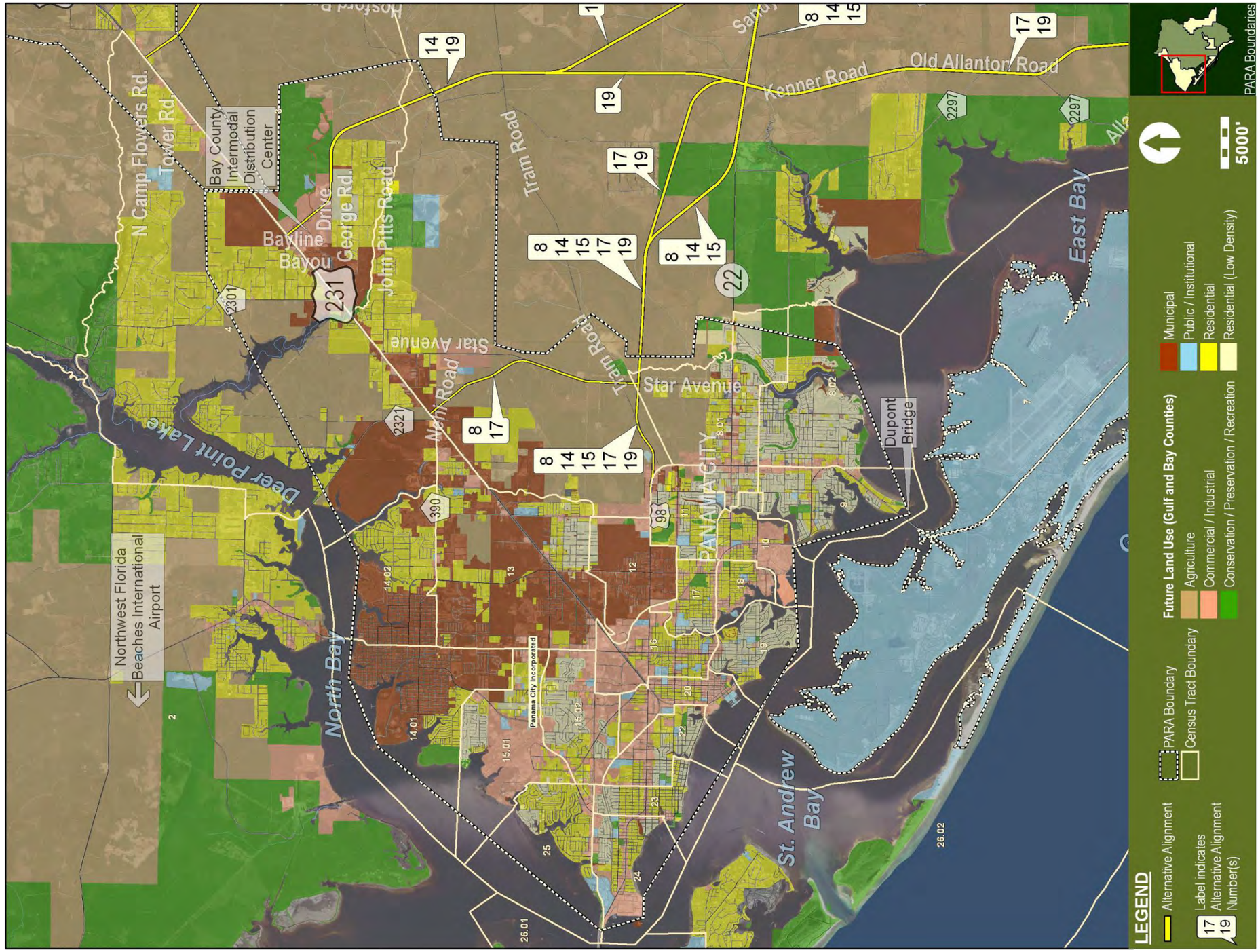


Figure 4-9: Mexico Beach Subarea Future Land Use Map

Figure 4-10: Bay County Unincorporated Subarea Future Land Use Map

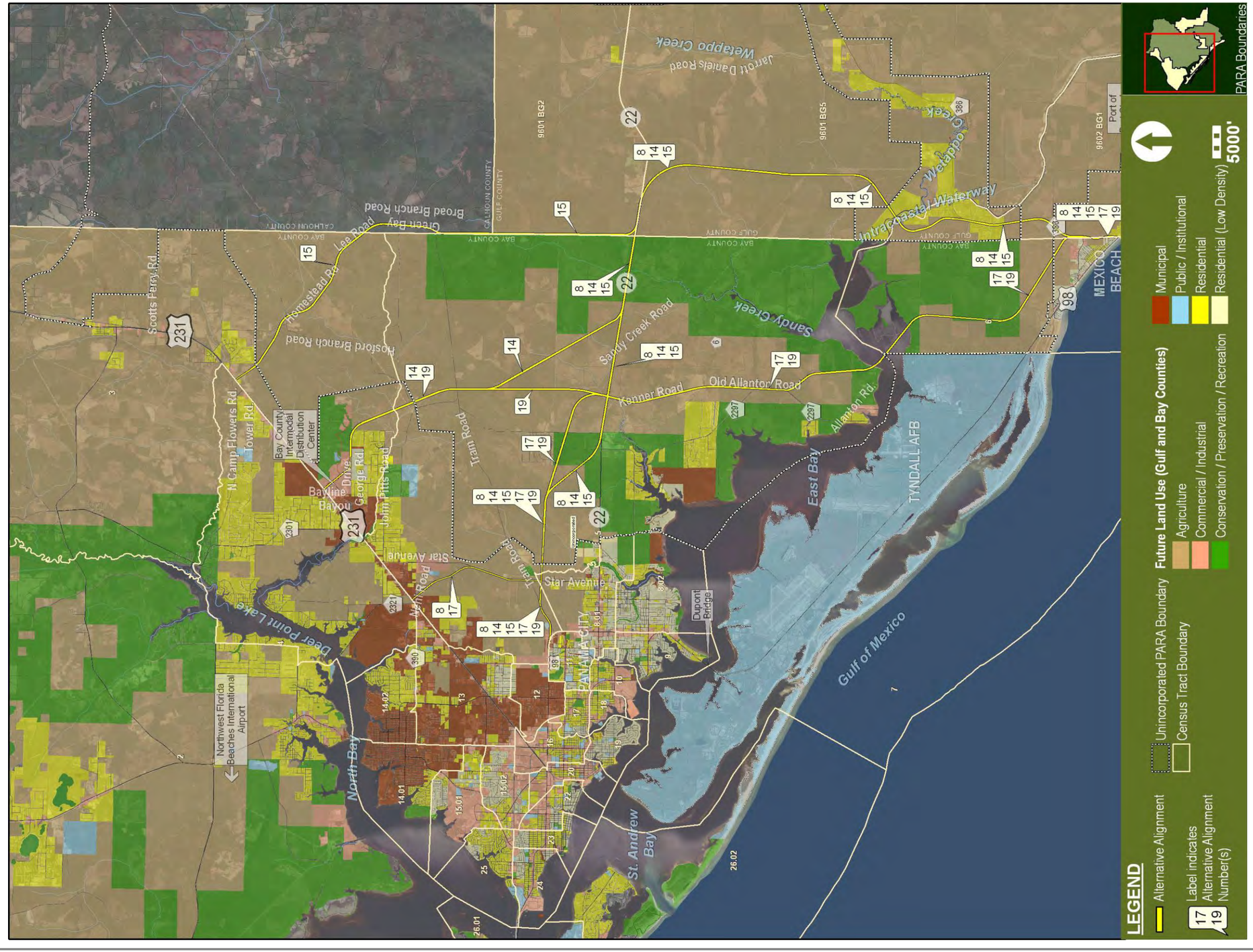


Figure 4-11: Wetappo Subarea Future Land Use Map

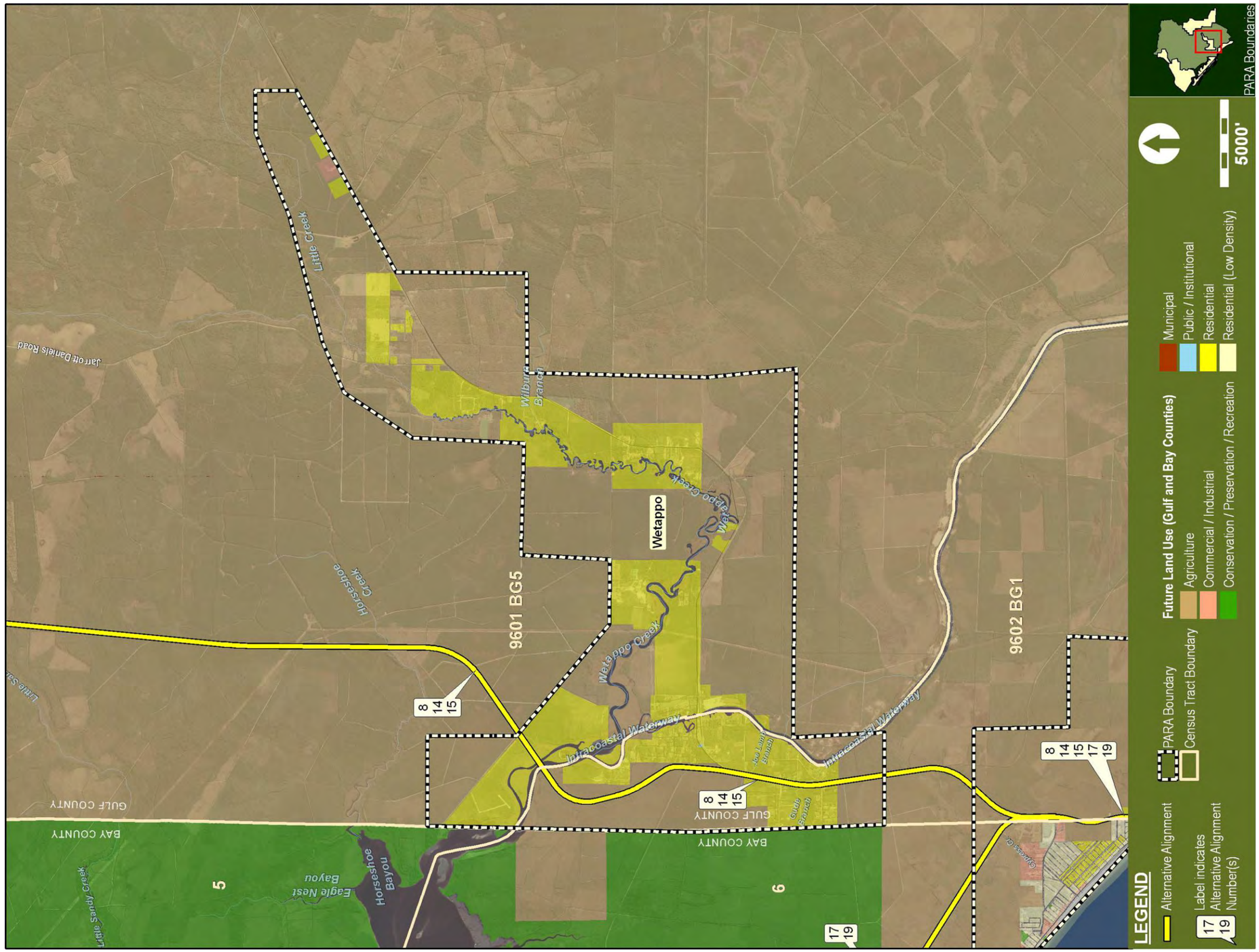


Figure 4-12: Wewahitchka Subarea Future Land Use Map

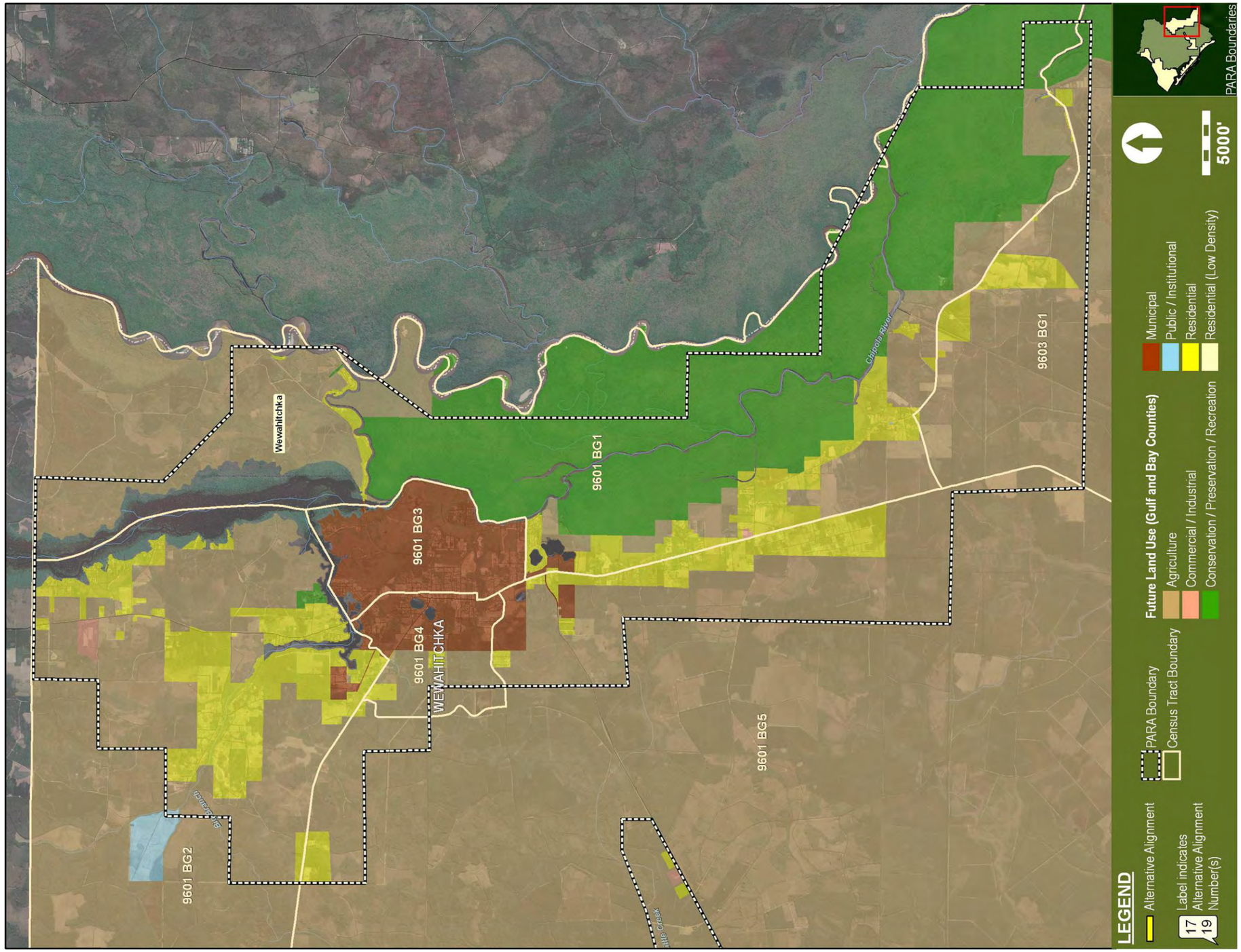
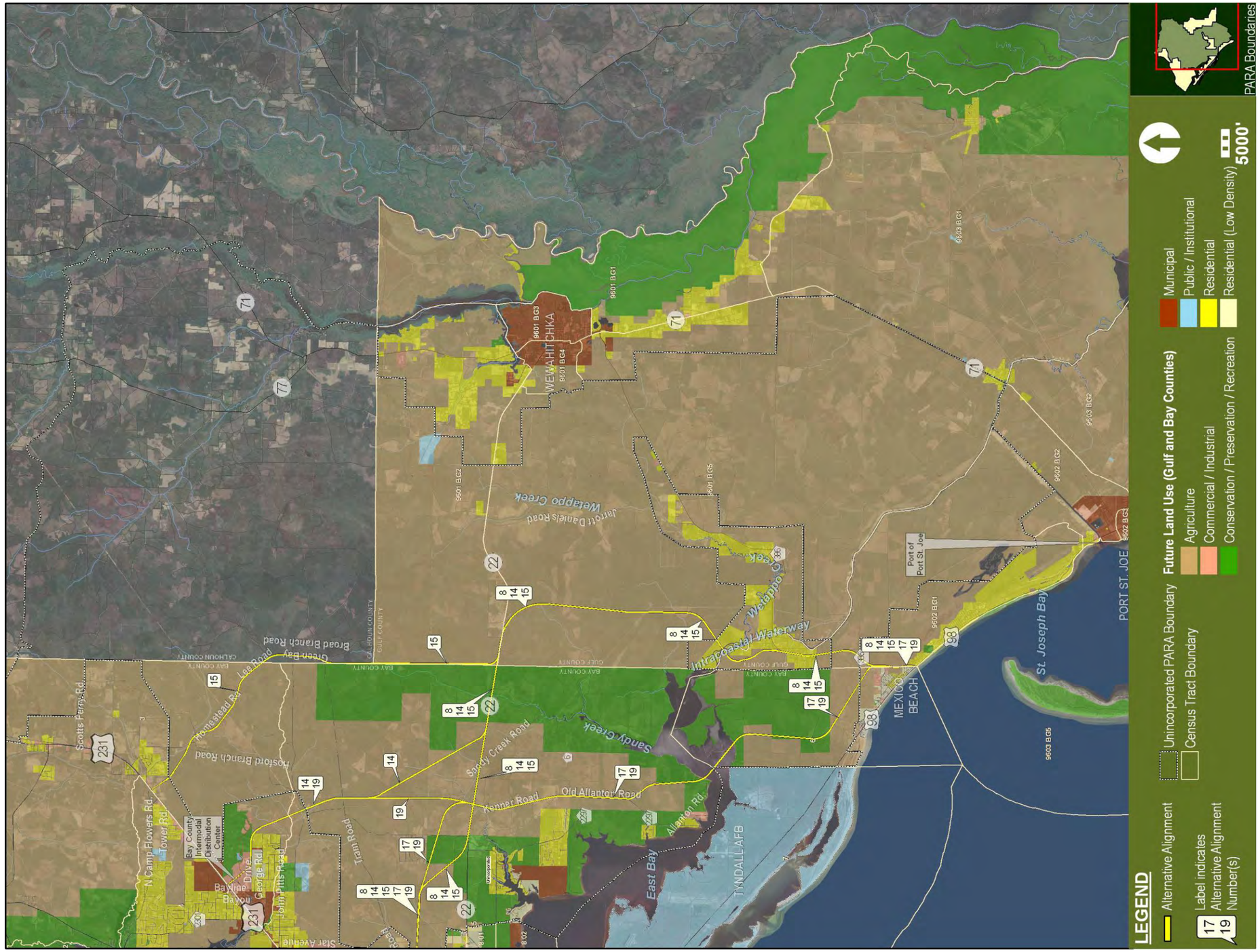


Figure 4-13: Gulf County Unincorporated Subarea Future Land Use Map



- The amount of traffic diverted by the Gulf Coast Parkway is dependent on the alternative selected. Alternatives 8, 14, and 15 are so far away from US 98 (Tyndall Parkway) that the traffic that is diverted to the Gulf Coast Parkway is not traffic that is likely traveling to US 98 (Tyndall Parkway). The traffic along US 98 through Mexico Beach to US 98 (Tyndall Parkway) would continue to use US 98 through the Tyndall AFB rather than use Alternatives 8, 14, and 15 which would take them further out of their way.

- Traffic on US 98 (Tyndall Parkway) is currently operating at Level of Service (LOS) F. In addition to the delay in reaching a destination, traffic congestion at this level makes it difficult to enter and exit adjoining properties. Therefore, businesses adjoining a heavily-congested facility may lose customers to competitors that are easier to reach, even if somewhat farther away.

- The actual reduction in traffic on US 98 (Tyndall Parkway) due to the Gulf Coast Parkway is not significant. The Gulf Coast Parkway would only delay the need to improve US 98 (Tyndall Parkway) for about five years. However, the reduction in congestion provided by the Gulf Coast Parkway could benefit the businesses along US 98 (Tyndall Parkway) by making them more accessible.

All Gulf Coast Parkway Build alternatives would intersect US 98 (Tyndall Parkway). This intersection is in an area currently designated commercial/industrial. Therefore, it is reasonable to expect that the Gulf Coast Parkway would encourage further economic development in this area. The type of economic development is expected to be consistent with current commercial and industrial land uses present in the area.

Other economic benefits of the Gulf Coast Parkway within Panama City Incorporated subarea would vary depending on the alternative. Alternatives 14, 15, and 19 offer the least economic benefit to the Panama City Incorporated subarea due to their distance from the area. Alternatives 8 and 17 would provide improved access to Star Avenue and US 231 at Nehi Road. There are areas along Star Avenue, north of Nehi Road, and along US 231 in the vicinity of Nehi Road that have a commercial/industrial land use designation and would benefit from the access provided by Alternatives 8 and 17. Further, the Nehi Road intersection with CR 2321 which provides access to SR 77 would likely become a major route to the NWFBIA for residents in Gulf County and southeast Bay County. This route would likely become more commercial/industrial in nature than it currently is.

Of the two Build Alternatives benefitting the Panama City Incorporated subarea (Alternatives 8 and 17), Alternative 17 would likely provide the greater economic benefit because its southern leg (south of SR 22) is closer to the Panama City Incorporated subarea and traverses an area with some residential and industrial development. With the connection to CR 2321 (and the NWFBIA via SR 77 and CR 388), this area is also likely to grow and would create more demand for services. Therefore, Alternative 17 is the Gulf Coast Parkway alternative most likely to benefit the Panama City Incorporated subarea.

Tyndall Subarea

The Tyndall subarea, which incorporates all of the Tyndall AFB Reservation, is unique in that its population is influenced solely by the plans of the United States Department of Defense. Increases, or decreases, in programs at the Tyndall AFB affects the economic prosperity of the areas around the base, but the base itself is not affected by changes in these communities. Given that the project has no direct involvement with the Tyndall subarea, the potential for the project to affect the economic status of the Tyndall subarea will be given no further consideration in the economic effects evaluation.

Mexico Beach Subarea

Economic growth within the Mexico Beach subarea is likely to be associated with tourism and therefore more service industry in character. The construction of the Gulf Coast Parkway could stimulate investment in businesses that would attract tourists or could result from the demand created by improved accessibility to Mexico Beach provided by the Gulf Coast Parkway. There is no significant measurable difference between the Build Alternatives regarding the effect on tourism; however, public opinion expressed during the public outreach efforts was that the Build Alternatives that connect to US 231 further to the north would be most beneficial to tourism. The alternative with the US 231 terminus located furthest to the north is Alternative 15, followed by Alternatives 14 and 19.

On a more local scale, the City of Mexico Beach would likely experience somewhat greater economic opportunity with Alternatives 17 and 19 which utilize an alignment that deviates from existing CR 386 and travels generally parallel to US 98 for the length of the community to the Tyndall AFB Reservation boundary before turning north. This alignment is located approximately 1.5 miles north of the Mexico Beach and would provide new access to property that was previously inaccessible. Due to proximity to Mexico Beach, the alignment of Alternatives 17 and 19 could serve as a "back beach" road for the local communities in the area. Such roads in other areas along the coast have seen significant growth with infill occurring between the "back beach" road and existing development. However, because there is a planned development (Bonfire) with a permitted capacity of 500 dwelling units (950 people) in this area, no additional residential development is anticipated within the planning period. It is likely that some commercial development, such as gas stations or convenience stores, would occur around the intersection of the Gulf Coast Parkway with CR 386.

Alternative 19 is the only Gulf Coast Parkway alternative that provides both the tourism benefit of a northern connection to US 231 and the potential local benefit of a "back beach" road.

Bay County Unincorporated Subarea

Economic growth in unincorporated Bay County will depend largely on the alternative selected. The alignments of Alternatives 8, 14, and 15 remain in Gulf County south of SR 22. North of SR 22, Alternatives 14 and 15 travel near or through the proposed Bear Creek development. Since the Bear Creek development is proposed to occur with or without the Gulf Coast Parkway, the Gulf Coast Parkway is not seen as greatly influencing economic development other than possibly expediting it. Alternative 8 enters Bay County farther west and would only influence development in the unincorporated areas along SR 22. The closer to the incorporated areas around Panama City the more likely development might occur.

Alternatives 17 and 19 provide a different scenario since their alignment south of SR 22 crosses on to Allanton Point near an existing shipbuilding facility and follows existing roads into residential areas. The presence of industry and a potential work force give these alternatives greater potential for further economic development and economic development of the type to provide more jobs than is normally associated with service industry sector.

Wetappo Subarea

Economic growth in the Wetappo subarea is expected to be limited even with the Gulf Coast Parkway Alternatives 8, 14, and 15, which utilize existing CR 386 up to the community of Overstreet. Most economic growth in the region is predicted to occur along the coast in the Mexico Beach subarea and in or near the already developed areas of the Panama City Incorporated subarea. However, of all the Gulf Coast Parkway alternatives, Alternatives 8, 14, and 15 provide the most access to the enterprise zones in Gulf County and therefore could provide some added stimulus to business location decisions in the enterprise zones within the subarea. Enterprise zones within the Wetappo subarea include CR 386 and all of the Overstreet community. Most of the economic

growth that would likely occur in these areas would be of the service industry type to support the residents in the area.

Alternatives 8, 14, and 15 would bring more traffic into Overstreet and would open up areas to the west of the community that are currently undeveloped. It could be expected that some growth might occur in the area between the Gulf Coast Parkway alignment and existing Overstreet. Additional growth would create a demand for services that would most likely locate within the enterprise zone.

Alternatives 17 and 19 would provide little or no economic benefit to the Wetappo subarea.

Wewahitchka Subarea

The community of Wewahitchka would not experience any direct economic effects from the proposed project. It could, however, notice a decline in traffic along SR 71 due to the use of Gulf Coast Parkway as an alternative for traffic between Port St. Joe and the Panama City area or US 231 for travel north and west of Panama City. Traffic between Port St. Joe and points north or northeast would continue to utilize SR 71 as the most direct route to those areas. A 0.71 mile-long segment of SR 71 (south of SR 22 to Wewahitchka city limits) has been projected by the Apalachee RPC to exceed LOS guidelines by 2006. The rerouting of through traffic onto the Gulf Coast Parkway could delay the need to widen that segment of SR 71.

Many of the businesses in Wewahitchka are supported primarily by the local community and tourists who visit the Dead Lakes State Recreation Area. A reduction in through traffic on SR 71 would not have a significant adverse effect on the profit levels of these businesses, as purchases generated by through traffic are a small percentage of their overall income and most businesses in the area provide services (such as tax preparation, computer repair, septic tank servicing, veterinarians, landscaping, etc.) to area residents rather than to through traffic.

Further, encouraging the Wewahitchka community to remain the small, rural community that it is would be of benefit to the local beekeeping industry. Wewahitchka is one of the few places in the world where tupelo honey is produced commercially, contributing as much as $2.4 million a year to Florida's economy[10]. In recent years it has become increasingly harder to produce the honey, due to a variety of ecological and political reasons. Reasons cited for the decline include: the dumping of dredged material that has cut off many tupelo trees from their source of fresh water, upstream water diversion that has lessened the flooding needed for a healthy tupelo forest, and land development and exotic pests that have reduced bee colonies by 30 to 50 percent[9]. Removing through traffic from SR 71 would delay the need for future widening, thereby promoting the continuance of the rural community economy and helping to keep the beekeeping business viable.

Gulf County Unincorporated Subarea

Most of the unincorporated area is rural undeveloped lands held by a single owner (approximately 80%). There is no plan to change the existing silviculture practices occurring on this land. Therefore, the presence of a major four-lane highway is not likely to change the overall land use, even though the Gulf Coast Parkway alignment under Alternatives 8, 14, and 15 would split the property.

Any development that might occur within this area would be anticipated to occur along the intersection of the Gulf Coast Parkway and SR 22. Roadside development is typified by gas stations, convenience stores, and lodging establishments. The only Gulf Coast Parkway intersection with SR 22 occurs with the alignment of the southern leg of Alternatives 8, 14, and 15. The likelihood of any development occurring at this location is limited due to the distance of the proposed intersection from either Wewahitchka or Callaway.

Enterprise Zone Subarea

Enterprise zones are specific geographic areas that encourage economic growth and investment by offering tax refunds and credits to businesses locating within the boundaries of the zone. Designated enterprise zones in the Gulf Coast Parkway study area are along US 98, including all of the St. Joe Beach, and along CR 386 up to and including all of the Overstreet area. (**Figure 4-14**).

Although under the No Build Alternative, CR 386 is within the enterprise zone, the two-lane configuration of the road does not provide any additional incentive to locate a new business in the zone. On the other hand, improved transportation facilities, such as four-lane highways, make sites within enterprise zones more attractive for business development. The FHWA has published the results of interviews with manufacturing, service, and retail businesses within communities along Highway 29 in Wisconsin, which documented an over-all improvement in the economic climate. Trucking companies indicated that the convenience, safety and higher speed limit provided by the four-lane facility increased the reliability and efficiency of delivering commodities to their destinations; benefits especially important in the transport of perishable goods. Service providers indicated that the ease of access and faster travel times improved their businesses. Retail establishments reported that the four-lane highway increased the number of vehicles using the highway and reduced truck traffic in downtown areas.

Based on the widening of CR 386 alone, the proposed Gulf Coast Parkway Build Alternatives are expected to enhance the marketability of sites within the Gulf County enterprise zones. Alternatives 8, 14, and 15 provide more exposure to enterprise zone along CR 386 than Alternatives 17 and 19.

Table 4-11 summarizes the foregoing discussion by identifying which alternatives have been determined to provide the most economic benefit within each of the subareas. Those subareas not likely to experience any economic benefit had the alternatives marked N/A. The number of times an alternative was identified as having potentially the greatest economic benefit was totaled to identify the Gulf Coast Parkway alternative which provides the most overall economic benefit locally. Although specific businesses that would locate within the enterprise zone PARA are not known, it is expected that most businesses would be of the service and retail industries typically associated with coastal resort areas. These could include gas stations, restaurants, souvenir shops, hotels, condominiums, sports supply, business supply, etc.

Figure 4-14 Enterprise Zones in the Gulf Coast Parkway Study Area

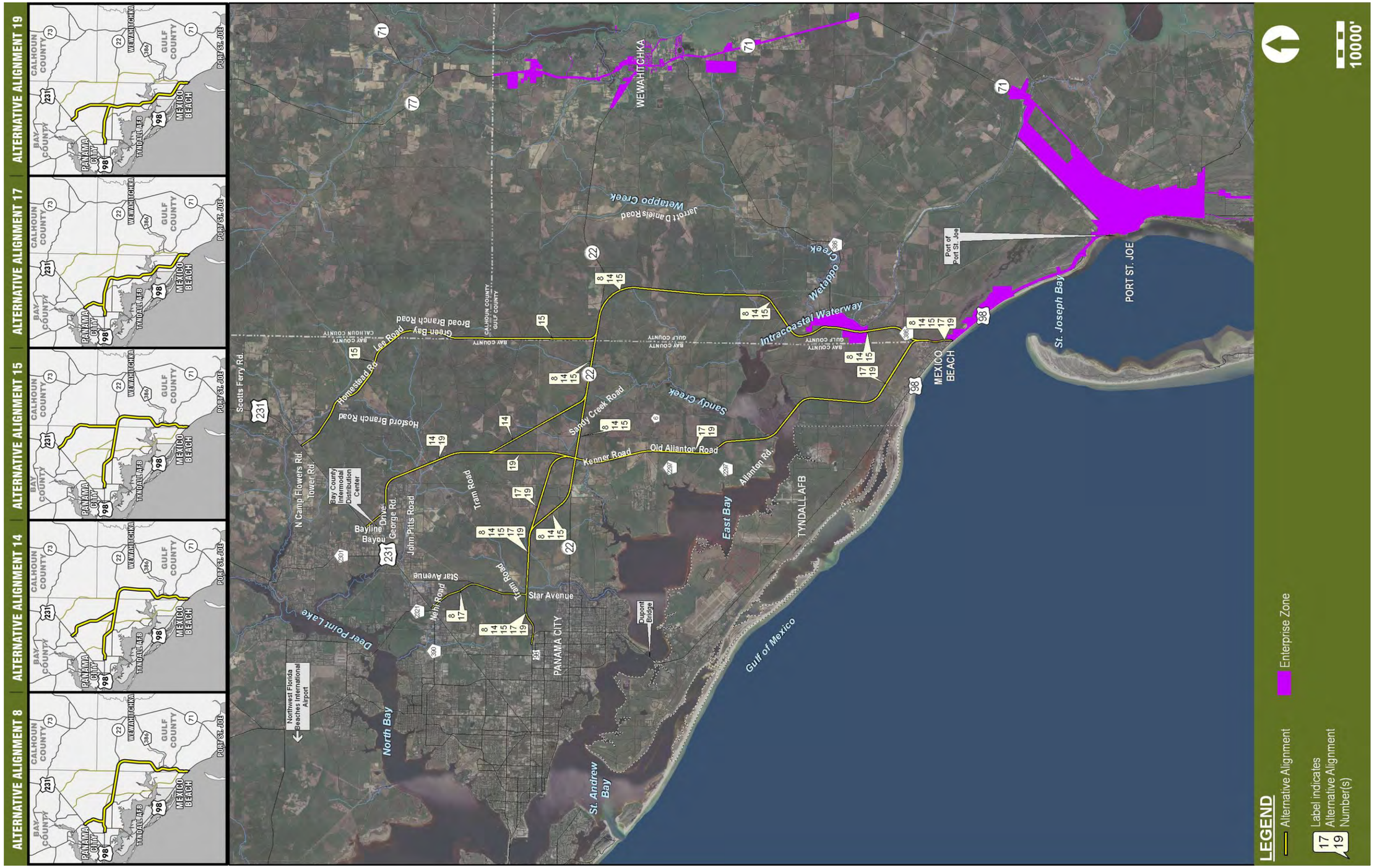


Table 4-11: Gulf Coast Parkway Alternatives Providing Most Economic Benefit by Subarea

Subarea	Alternative					
	No Build	8	14	15	17	19
Bayou George	None	None	**X**	None	None	**X**
Panama City Incorporated	None	None	None	None	**X**	None
Tyndall	None	N/A	N/A	N/A	N/A	N/A
Mexico Beach	None	None	None	None	None	**X**
Bay County Unincorporated	None	None	None	None	**X**	**X**
Wetappo	None	**X**	**X**	**X**	None	None
Wewahitchka	None	None	None	None	None	None
Gulf County Unincorporated	None	None	None	None	None	None
Enterprise Zones	None	**X**	**X**	**X**	**X**	**X**
Number of Times Most Economically Beneficial	**None**	**2**	**3**	**2**	**3**	**4**

4.1.2.4 Potential Economic Effects on Residential Areas

The No Build Alternative would have no direct economic effects on residential areas. However, the lack of improved transportation facilities may result in the continuing stagnation of the local economy in Gulf County. Residential and commercial property values in a stagnant economy would, at best, increase only slowly, perhaps not all, and may even fall.

Potential economic effects of transportation improvements on residential property values may be short-term or long-term. Short-term direct impacts arise most often from right-of-way acquisition. The acquisition of right-of-way from residential or business properties results in the removal of the purchased land from the tax rolls. The potential impacts of the Build Alternatives on the local government tax revenues will be discussed in the next section.

Long-term indirect impacts on residential areas result from changes in property values and employment opportunities. Impacts to residential areas may result from a project inducing a transition of a residential area to mixed use or commercial. This type of impact usually affects the properties immediately adjacent to the improvement. The only existing residential area adjacent to the proposed Build Alternatives is the areas along CR 386 through Mexico Beach/St. Joe Beach, south of and approaching Overstreet, and the residential area in Overstreet approximately 250 feet east of the new alignment segment approaching the crossing of the ICWW and Wetappo Creek. All of the land adjoining CR 386 in Gulf County is designated enterprise zone, so this land is already in transition from residential to commercial. Therefore, at most, the Build Alternatives would expedite the conversion of the land along and east of CR 386 to mixed use or commercial use. Alternatives 8, 14, and 15 are the only alternatives that follow new alignment west of Overstreet. This residential area may see their land values decline under these alternatives if the impact to aesthetic values of these properties is not offset by the improved access to the Panama City area.

Residential property values in the communities of Mexico Beach and St. Joe Beach may also benefit from improved travel times to the Panama City area where there are greater opportunities for employment and shopping. In addition, Mexico Beach and St. Joe Beach are tourist locations and the improved access to these communities could be expected to increase property values.

Projects on new alignment can have a nearly immediate effect on property values when they provide access to previously inaccessible raw land suitable for development. The amount of exposure of each Build Alternative to raw land was determined based on the assumption that any raw land having a land use designation of agricultural or residential would be developable (this evaluation did not consider other factors other than land use designation that would preclude development on raw land). **Table 4-12** summarizes the length of each alternative that traverses agricultural and/or undeveloped residential land uses. Each side of the proposed roadway was calculated separately to account for those sections where suitable raw land occurred on only one side of the proposed alignment. The No Build was not included in this analysis because it does not provide a four-lane divided facility adjacent to agricultural and residential lands.

Table 4-12: Miles of Exposure to Raw Land Suitable for Residential Development for Each Alternative

Side of Alternative	Alternatives				
	8	14	15	17	19
West Side	26.6	33.2	31.6	18.2	23.1
East Side	25.9	31.5	35.1	17.2	22.1
Total Miles	52.5	64.7	66.7	35.4	45.2

From the miles of exposure to raw land in the **Table 4-12**, Alternative 15 would provide the most four-lane highway frontage to potentially developable land, Alternative 17 the least, and the No Build Alternative provides none; suggesting that for this single economic consideration Alternative 15 provides the most benefit.

4.1.2.5 Potential Impacts to Taxing Authorities

Property taxes are collected by local governments and other agencies (public schools, special use taxing districts, etc.) based on the assessed value of property. The amount of annual property taxes collected can be affected by changes in the value of commercial and residential properties, or by removal of properties from the tax rolls. Therefore, the conversion of private property to public use has a direct impact on property tax revenues.

Since the No Build Alternative does not acquire right-of-way the No Build Alternative would have no effect on the tax revenues. All of the Build Alternatives require right-of-way acquisition that would remove property from the tax rolls. However, much of this land is in agricultural use, which receives agricultural tax exemptions, reducing the revenue the counties receive from this type of land use. **Table 4-13** shows the acreage to be converted to public use in each county for each alternative.

Table 4-13: Acreage of Taxable Property Converted to Public Use for Each Build Alternative

County	Alternatives				
	8	14	15	17	19
Gulf	504	509	747	33	33
Bay	352	614	360	809	858
Calhoun	0	0	109	0	0
Total	854	1,123	1,216	842	891

Alternatives 17 and 19 not only remove the least amount of land from the tax rolls they remove the least amount of land from Gulf County which is the county with the least economic resources. Further, since the project is anticipated to stimulate the local economy, the initial loss of revenue due to the conversion of taxable lands to public use, could be expected to be at least partially offset by increases in property values, conversion of

agricultural lands to greater taxable uses, additional sales taxes from increased tourism, and taxes from new businesses locating to the area.

An estimate for the amount of taxable value that will be lost due to each alternative's conversion of private land into public right-of-way, as well as loss in taxes collected, is shown in **Table 4-14**, below:

Table 4-14: Taxable Value Lost Due to Conversion of Land to Transportation Use

Alternative	Taxable Value Lost	Taxes Lost
8	$105,574.00	$444.60
14	$97,709.70	$453.18
15	$148,612.00	$723.20
17	$93,672.50	$349.59
19	$92,818.80	$346.53

Each of the proposed alternatives will be placed mostly on large, agriculturally zoned parcels which are uninhabited, or tie-in to pre-existing roadways. Most developed areas, where land values are greater, will be avoided. Considering the limited monetary value of most of these parcels, the comparatively small amount of land needed for the roadway, the increase in taxable value of properties adjoining the new road, and the expected economic benefits the presence of the proposed project will provide, the loss in taxable value of land converted to transportation use is of little concern. This has been evidenced by Gulf County's strongly stated preference that any alternative selected remain within Gulf County for as long as possible.

4.1.3 Land Uses

After ETAT review of the proposed project in the EST, the FHWA responded with the following comment concerning land uses (comment and response presented in Appendix I):

- *FHWA – Secondary and cumulative impacts on resources should be analyzed. The effects of expanded economies on resources should be addressed.*

An ICE analysis has been conducted for this project. This analysis is documented in the ICE Report prepared for this project and is summarized in Section 4.3.20 of this report. Economic analysis of the project is included in Section 3.2 and in Section 4.1.2 above.

The Gulf Coast Parkway has the potential to affect land uses both directly and indirectly. Direct effects result from the acquisition of land not designated for transportation (such as farmland, commercial, or residential) and converting it from its current usage to a transportation use. In some cases, even when the transportation improvement is a local goal, such a conversion may be inconsistent with other long-range planning goals and policies of the local government, or regional and state planning agencies (discussed below). Further, transportation projects, particularly improvements on new alignment, have the potential to influence the location and type of future development as occurs when a project makes previously isolated areas accessible. The discussion of indirect effects on land uses is provided in Section 4.3.20.

4.1.3.1 Existing and Future Land Uses

Existing and future land uses were obtained in Geographic Information System (GIS) format from Gulf and Bay counties and field verified. (See Sections 3.5.4 and 3.5.5 of this report for a discussion of the land uses in the study area.) The existing and future land use maps do not include the proposed project and represent the No Build

Alternative. Direct impacts of the proposed project were determined by calculating the conversion of existing land uses to transportation use and indirect impacts were determined at locations where the newly converted transportation land use would be adjacent to a land use that is incompatible with that transportation use. (How the induced growth and cumulative effects of the project on land use were determined is discussed in Section 4.3.20)

Potential direct land use impacts were based on property acquisitions necessary for each alternative's right-of-way needs. **Table 4-15** shows the acreage of the various land use types that potentially would be subject to conversion to transportation for each of the Build Alternatives. The No Build is not included as it is assumed no right-of-way acquisition would be required under the No Build Alternative.

Table 4-15: Comparison of the Conversion of Existing Land Uses to Transportation Use (in acres)

Land Uses*	Alternatives				
	8	14	15	17	19
Agricultural	729	977	1,092	698	726
Residential	53	57	52	8	12
Conservation/Preservation/Recreation	72	72	72	136	136
Commercial/ Industrial	0	17	0	0	17
Total Acres Converted to Transportation Use	854	1,123	1,216	842	891

* Since the project alternatives pass through multiple jurisdictions with varying land use categories and subcategories, to simplify the presentation of data, similar land use designations have been grouped into a generic category suitable for the land use type.

Each Build Alternative was also evaluated for consistency with the land uses adjoining the alignments and the goals and policies of the comprehensive plans. Of the land use categories present within the study area only residential land uses would be inconsistent with a new major highway. Lands in the study area with a conservation land use designation are not incompatible with a new major highway because they are in a conservation subcategory known as conservation-habitation (which allows public/institutional uses, public utilities, residential uses, etc.) and are privately-owned and not being managed for conservation, recreation, or wildlife preservation.

For purposes of this evaluation, existing residential areas abutting highways that would be incorporated into the Gulf Coast Parkway alignment are not considered inconsistent. However, residential areas that currently do not abut a highway but, as a result of the project, would be adjacent to the Gulf Coast Parkway are considered indirectly impacted and the Gulf Coast Parkway would be considered inconsistent. In addition, where the Gulf Coast Parkway alignment would bisect any undeveloped area that has been designated residential, the proposed road is considered inconsistent (**Figure 4-15**). **Table 4-16** summarizes the length of each alternative that would be inconsistent with residential land uses.

Table 4-16: Miles of Incompatible Land Uses Adjacent to the Gulf Coast Parkway Build Alternatives

Incompatible Land Use	Alternatives				
	8	14	15	17	19
Residential	0.72	1.23	0.72	0.0	0.51

Figure 4-15: Gulf Coast Parkway Alternatives Involvement with Incompatible Land Uses

From **Table 4-15**, it is apparent that Alternative 17 has the least direct impacts to land use and from **Table 4-16**, it is apparent that Alternative 17 would have the least indirect involvement with incompatible land uses. Therefore, from a land use perspective, Alternative 17 provides the least negative effect on land use of all the Build Alternatives.

4.1.3.2 Involvement with Conservation/Preservation Land Use

This section addresses areas having a conservation/preservation land use designation. These are not lands in conservation, but are lands identified by the county in which they occur as having intrinsic value that, in accordance with the County's policy, should not be subject to extensive development.

The No Build Alternative would have no involvement with lands identified as conservation/preservation land use, although there are segments of existing roads that travel through lands with a conservation land use designation. All of the Build Alternatives would have varying degrees of involvement with areas designated as conservation land use in the *Bay County Comprehensive Plan*[14]. Development in these areas is based on the different conservation categories. Conservation Preservation Zones (CSVP) are the most strict allowing only public utilities and infrastructure necessary to support conservation preservation uses and passive recreation. The clearing of land is prohibited, except as required by county-approved Preservation Management Plans. The Conservation Recreation Zone (CSVR) allows recreational uses. Residential and public/institutional uses may be allowed, if they are accessory to uses and structures within the zone. Clearing of land is prohibited except as required in accordance with county-approved Recreation Management, Fire Protection, and Security Management Plans. The Conservation Habitation Zone (CSVH) permits agricultural and silvicultural activities, recreation uses, public/institutional uses, and residential uses. Clearing of land is prohibited except as required in accordance with agricultural and silvicultural Best Management Practices (BMP), and as required in accordance with county-approved Fire Protection Plans and construction permits.

A comparison of the potential involvement of the Build Alternatives with conservation lands is presented in **Table 4-17**. This involvement is with a land use designation and not with public being managed for conservation or private lands in conservation easement. Please refer to **Figure 3-13** for the location of these conservation land use areas.

Table 4-17: Gulf Coast Parkway Alternatives' Involvement with Conservation Land Uses

Alternative	Conservation Land Use* Impact Acres
No Build	0
8	72
14	72
15	72
17	136
19	136

*Bay County Comprehensive Plan Future Land Use identified as Conservation

The Bay County Land Development Regulations specify allowable development in the Conservation Land Use categories. Allowable uses include agriculture (when BMP are used), recreation, public/institutional, planned development unit, residential, optional sector plans, docks, piers, seawalls, public utilities, and other similar uses. The restrictions on developments on these lands are to be planned and built to minimize impacts to local significant environmental resources[11].

Alternatives 17 and 19 will impact more (136 acres) of the conservation land use acres than Alternatives 8, 14, and 15. As shown in **Figure 3-15,** Alternatives 17 and 19 impact most of the conservation land use acreage south of East Bay but impacts also occur approximately 1.2 miles north of SR 22. Alternatives 8, 14, and 15 impacts the

majority of their conservation land use acreage along existing SR 22 and a minor amount of acreage impact occurs where the alternatives depart north of SR 22.

In addition to the Conservation land use category, Bay County has overlays to the Future Land Use Map designated Special Treatment Zones. Special Treatment Zones impose additional requirements above those required by the underlying land use categories. Unless it can be demonstrated that no locally significant natural resources exist on a parcel of land subject to development, or a developer can design and construct a development project such that locally significant natural resources are preserved, or impact minimized, the additional development restrictions apply. These restrictions include, among others, the treatment of stormwater runoff to Outstanding Florida Waters (OFW) standards, or greater. Of the eight Special Treatment Zones identified in Land Development Regulations, Ecosystem Management Areas (EMA) is the zone most affected by the Gulf Coast Parkway Build Alternatives (see **Figure 3-16**).

Since the No Build Alternative does not involve construction activities, there would be no involvement with the requirements for EMAs. However, all of the Build Alternatives have involvement with the area designated the East Bay EMA. The East Bay EMA overlays the lands designated conservation and some adjacent silvicultural lands, which accounts for the Build Alternatives' slightly greater involvement with the East Bay EMA than with the conservation lands. Alternatives 8, 14, and 15 would require 129 acres from the East Bay EMA and Alternatives 17 and 19 would require 157 acres.

There is, however, a future Florida Forever land acquisition project in the study area. Florida Forever, Florida's conservation and recreation land acquisition program, currently has approximately 1.9 million acres targeted for purchase. The Florida Forever Project in the Gulf Coast Parkway study area, known as Bear Creek, is located north of SR 22 (see **Figure 4-16**). The Bear Creek Forest project is ranked number 21 on the Critical Natural Lands Projects list and has a Medium/Low Work Plan priority in the Five Year Work Plan (dated April 24, 2012). It consists of approximately 104,461 acres of mostly planted pine plantation that will require restoration efforts.

Alternatives 8 and 17 would have no involvement with the Bear Creek Forest land acquisition project. However, Alternatives 14, 15, and 19 would cross through the targeted lands (as currently conceived). However, since these lands are only listed for acquisition and remain in private ownership, there would be no involvement with conservation uses and, therefore, not subject to Section 4(f).

4.1.3.3 Consistency with Land Use Planning

Although the proposed project is not shown on Gulf County's adopted future land use map, or its Traffic Circulation Map, the Traffic Circulation Element of the *Gulf County Comprehensive Plan*[12] (revised 12/2009) Policy 1.2.3 states: "To improve hurricane evacuation, economic growth and reduce impacts to Tyndall AFB, Gulf County encourages the creation of a new north/south regional roadway to Interstate 10 commonly referred to as the "Gulf Coast Parkway" and "Gulf to Bay Highway". The Gulf County Planning Department has indicated that when a preferred alternative is selected, the traffic circulation map will be modified to include that portion of the Gulf Coast Parkway within Gulf County. The proposed project is also included in the FDOT's *Five-Year Work Program* for Gulf County. Therefore, the project is deemed to be consistent with Gulf County's future land use planning.

The project is not specifically identified in the *Bay County Comprehensive Plan*[14] Transportation Element; however, Objective 4.9 states that the county will "Establish and maintain LOS standards for concurrency management purposes, and for determining when roadway improvements may be warranted. The Gulf Coast Parkway would assist the County in meeting this strategy by relieving congestion on deficient roadways in the study area. Objective 4.10 states that the county will "Assist and support efforts by Florida Department of Community Affairs (FDCA) toward improving major State highway access to and exit from Bay County to provide more effective and efficient transportation movement and hurricane evacuation. The Gulf Coast Parkway

would be consistent with this objective as it would improve the efficiency of the transportation network in eastern Bay County and as well as improve hurricane evacuation from the coastal areas of southeastern Bay County. Policy 4.7.1 of the *Bay County Comprehensive Plan*[14] (adopted 1999) Transportation Element states that the County will use the established Metropolitan Planning Organization (MPO) process to promote transportation improvements in Bay County. The MPO's, now the Bay County TPO's Long Range Transportation Plan (LRTP), Direction *2035-Shaping Our Future* [15] (adopted July 27, 2011) identifies the Gulf Coast Parkway in the *Cost Feasible Plan Report*[16] (January 25, 2012). It is also identified in the Bay County 2013-2017 *Transportation Improvement Program*[17] (adopted June 27, 2012, amended August 10, 2012). Therefore, the project is deemed consistent with the Bay County Comprehensive Plan.

The Bay County TPO and the counties of Gulf, Holmes and Washington became a new Regional Transportation Partnership (RTP) on September 28, 2005 by Interlocal Agreement using Chapter 163, FS This partnership was formed to implement regional coordination between the counties involved and to establish the regional partnership required under Section 339.2818 FS to be eligible for State Transportation Regional Incentive Program (TRIP) funding. The West Florida RPC serves as staff for the Bay, Gulf, Holmes, and Washington RTP. A regional network criteria and a regional transportation network map were adopted April 2006 and revised September 2007. The Gulf Coast Parkway project is shown on the Regional Transportation Network Map for the Bay, Gulf, Holmes, and Washington RTP.

Bay and Gulf Counties are under jurisdiction of different RPC. Bay County is part of the West Florida RPC and Gulf County is part of the Apalachee RPC. The Gulf Coast Parkway is consistent with both of the RPC's goals.

One of the issues in the *Strategic Regional Policy Plan* (SRPP) *of the Apalachee RPC*[18] is to provide more travel choices. The Gulf Coast Parkway was not identified in the SRPP which was prepared in 1996. However, the Gulf Coast Parkway would provide more travel choices and accommodate bicyclists and pedestrians. This is important to ensure a wider range of access to the users of the Gulf Coast Parkway, while also improving the overall transportation system in the jurisdiction and adjacent jurisdictions.

The *Comprehensive Economic Development Strategy for the Apalachee Region of Florida*[8] published by the Apalachee RPC in 2007 notes the FDOT planning section had recently completed a long range corridor analysis to 2050 to better focus on long range planning efforts. Among the key policies utilized by the FDOT in their analysis was providing access to economically-distressed areas. Among the proposed corridor improvements identified for this policy was the link the Gulf Coast Parkway would provide between US 231 in Bay County and US 98 in Gulf County. This project was identified as key policy objective in supporting choices about future growth and development.

4.1.4 Mobility and Accessibility

Improvements in mobility and accessibility of a project the size and scope of the Gulf Coast Parkway must be considered from various perspectives. From a freight transport concept, a mobility improvement would provide a decrease in the cost and time it takes to travel, while at the community level a mobility improvement may be achieved with the addition of bicycle and pedestrian facilities.

4.1.4.1 Mobility

Whether it is people or goods being moved, mobility is frequently quantified in terms of the time and cost required for travel. Therefore, a transportation improvement that reduces the time it takes to travel between locations and/or the cost of the transport of goods would be seen as providing an improvement in mobility. Mobility improvements may consist of providing choices in different transportation modes (such as adding buses or rail) or improving the operation of existing modes (such as reducing congestion or increasing connectivity through new routes).

The No Build Alternative does not change the existing condition and would not provide any improvements in mobility beyond projects that are already under construction or identified in planning documents for implementation. **Table 4-18** provides a list of planned improvements in the study area (shown on **Figure 4-16**). This list includes one environmental project: Bear Creek Forest. The Bear Creek Forest Florida Forever project has been included because, if it is implemented as envisioned, it has the potential to greatly affect future development in the region and the ability to meet mobility needs.

Table 4-18: Other On-going or Proposed Governmental Actions in the Gulf Coast Parkway Study Area

Project Name	Location	Description	Responsible Agency
CR 2312 (Baldwin Road) from SR 390 (St. Andrew Blvd) to Minnesota Avenue.	Bay County	Add lanes and reconstruct	FDOT
CR 390 from SR 77 (Ohio Avenue) to SR 75 (US 231)	Bay County	Preliminary Engineering for future capacity	FDOT
SR 22 (Wewa Highway) from SR 30 (US 98) to CR 2315 (Star Avenue)	Bay County	Preliminary Engineering for future capacity	FDOT
SR 30 (US 98) @ SR 368 (23rd Street) Intersection Phase 1	Bay County	Preliminary Engineering for future capacity	FDOT
Jenks Avenue from 23 rd Street to Baldwin Road	Bay County	Widen to four lanes	FDOT
Port of Port St. Joe Access Road	Gulf County	Seaport Capacity Project	FDOT
Gulf to Bay Highway Phase 3	Bay County	New highway construction	FDOT
Gulf to Bay Highway Phase 2	Gulf County	New highway design and permitting	FDOT
SR 30A (Tyndall Parkway)	Bay County	Add sidewalk from 11th Street to SR 22	FDOT
CR 2315 *Star Avenue)	Bay County	Add sidewalk from Cherry Street to SR 22	FDOT
Port of Port St. Joe	Gulf County	Dredging Ship Channel to 35 feet	Port Authority
Port of Port St. Joe	Gulf County	Infrastructure for Manufacturing Sites	Port Authority
Port of Port St. Joe	Gulf County	Dredging 39 feet	USACE*
Port of Port St. Joe	Gulf County	Extension of bulkhead	Port Authority
Port of Port St. Joe	Gulf County	Acquisition of future growth properties	Port Authority
Port of Port St. Joe	Gulf County	Rail Extension	Port Authority
Port of Panama City	Bay County	Maintenance dredging	Port Authority
Port of Panama City	Bay County	Berth 3 Dredging	Port Authority
Port of Panama City	Bay County	Container Terminal Expansion	Port Authority
Port of Panama City	Bay County	Relocate & Expand Truck Staging	Port Authority
NWFBIA	Bay County	Rehab Vehicular Access Road	NWFBIA
NWFBIA**	Bay County	Construct Crosswind Runway	NWFBIA
NWFBIA	Bay County	Develop T-Hangers and Miscellaneous	NWFBIA
NWFBIA	Bay County	Expand Anchors and Parking	NWFBIA
NWFBIA	Bay County	Expand Terminal Apron	NWFBIA
Bay Line Railroad	Bay County	Track Upgrade	Bay Line Railroad
Bear Creek Forest	Bay County Gulf County Calhoun County	Acquisition of 100,424 acres	FDEP***

* United States Army Corps of Engineers ***Northwest Florida Beaches International Airport ***Florida Department Environmental Protection

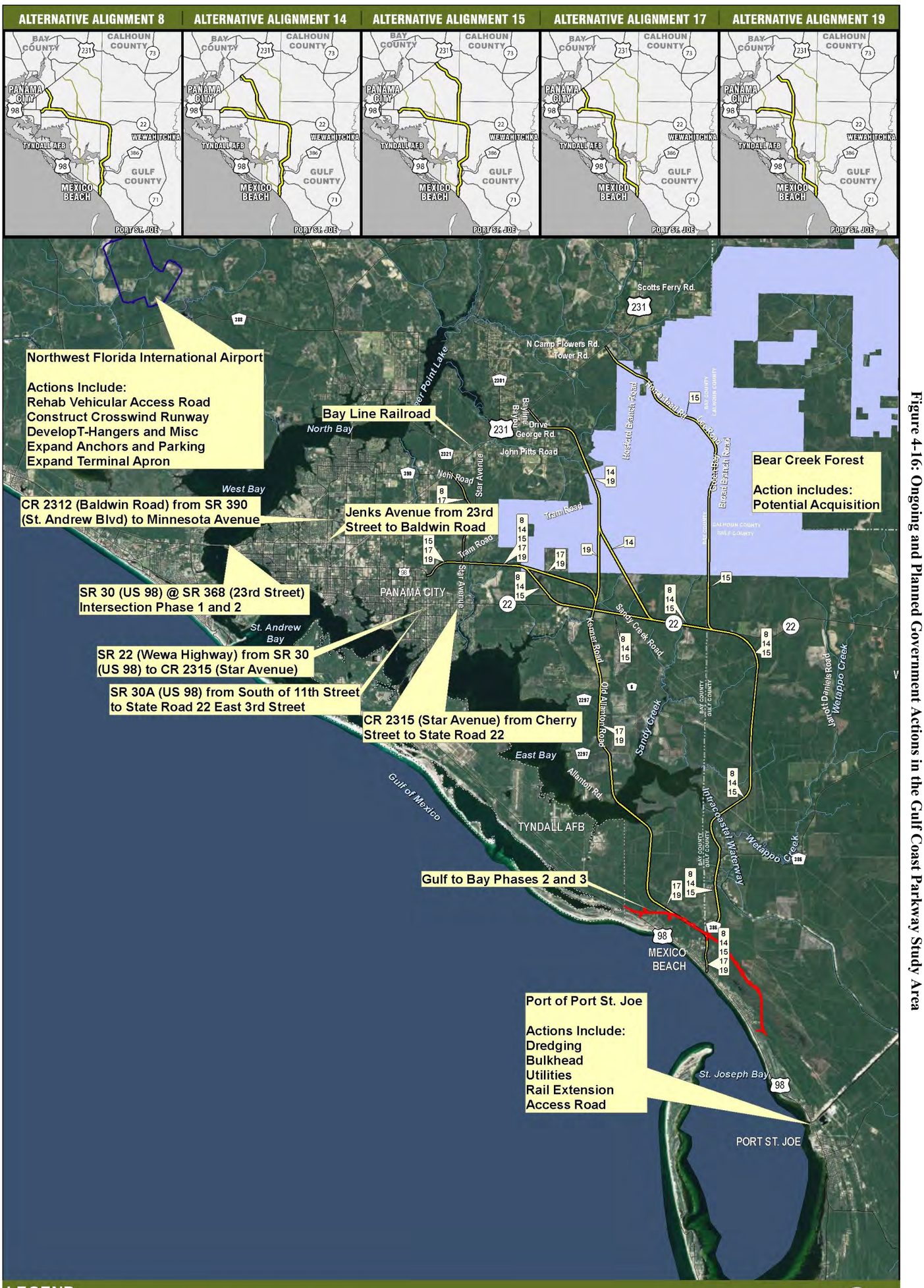


Figure 4-16: Ongoing and Planned Government Actions in the Gulf Coast Parkway Study Area

All the Build Alternatives offer mobility improvements that can be measured in terms of reduced travel times or added connectivity; although, there is variability among the Build Alternatives in providing these improvements. Connectivity can be accomplished by simply connecting to a new location or it can be achieved by increasing the choice of routes to travel to a destination. Further, it also would reduce congestion on existing routes such as US 98 (Tyndall Parkway), thus improving travel times on these routes. Providing increased opportunities to reach a destination is a benefit for those who previously found it difficult to reach that destination, but it can also be less efficient (in terms of travel time and cost) than a direct route with a limited number of intersections. However, a direct route may serve fewer users than one with multiple connections.

Therefore, the connectivity provided by the Build Alternatives was evaluated in two ways: estimate the number of connections each alternative would provide with existing network roads and determine whether or not an alternative would provide a direct connection to a planned route (A planned route is a transportation improvement project in the Bay County TPO's LRTP, *Direction 2035-Shaping Our Future*[15]).

As shown in **Table 4-19**, all Build Alternatives would provide new connections to SR 22, US 231, CR 2315, and US 98 (Tyndall Parkway). Alternatives 8 and 17 would also provide a new connection with CR 390 and CR 2321. Therefore, Alternatives 8 and 17 would have more connections to network roadways than Alternatives 14, 15, or 19. Alternative 8 and 17 are also the only alternatives with a direct connection to a planned transportation project at the intersection of US 231 and CR 2321. Therefore, Alternatives 8 and 17 perform better than Alternatives 14, 15, or 19 by providing more connections to existing roads and by connecting directly with a planned transportation project.

Table 4-19: Connectivity of the Gulf Coast Parkway Build Alternatives

Alternative	Network Roadways						Planned Routes
	SR 22	US 231	US 98 (Tyndall Parkway)	CR 2315 (Star Avenue)	CR 390	CR 2321	
8	X	X	X	X	X	X	X
14	X	X	X	X			
15	X	X	X	X			
17	X	X	X	X	X	X	X
19	X	X	X	X			

The Build Alternatives were also evaluated for a reduction in travel time to locations that are of economic importance to the area. Actual travel times to the identified destinations were established by traveling the existing routes during morning and afternoon peak-hour traffic times, using an accepted traffic engineering methodology. Once the time to travel the existing routes was established, these amounts were given a value of 1.

Travel times for each of the build alternatives were calculated and compared to the actual travel time for the existing routes. Each alternative's time to reach the respective destinations was then calculated as a percentage of the existing routes. **Table 4-20** shows the reduction in travel time of each alternative as a percentage of 1.

Table 4-20: Comparison of Travel Times of the Gulf Coast Parkway Alternatives

Alternative	Reduction in Travel Time to Freight Transfer Facilities	Reduction in Travel Time for Tourists to Coastal Gulf County	Improves Travel Time to NWFBIA*
No Build	1.00	1.00	1.00
8	0.83	0.83	0.80
14	0.67	0.67	0.84
15	0.78	0.78	0.91
17	0.71	0.67	0.76
19	0.65	0.67	0.84

*Northwest Florida Beaches International Airport

In order to determine which of the Build Alternatives performed best in providing mobility improvements, the alternatives' performances in each category were compared and the alternatives scored. The scores for each category were totaled to obtain a mobility performance score. The mobility performance scores were then ranked to determine how well an alternative performed in comparison with the other alternatives in terms of mobility

Table 4-21 provides the comparison of the mobility factors and the ranking of the alternatives for mobility.

Table 4-21: Comparison of Mobility Factors of the Gulf Coast Parkway Alternatives

Alternative	Reduction in Travel Time to Freight Transfer Facilities		Reduction in Travel Time for Tourists to Coastal Gulf County		Improves Travel Time to NWFBIA*		Provides New Connections to Network Roadways		Provides Connection to Future Planned Projects		Mobility Performance Score	Mobility Performance Rank
	%	Score	%	Score	%	Score	#	Score	Yes/No	Score		
No Build	1.00	6	1.00	6	1.00	6	0	6	N	6	30	6
8	0.83	5	0.83	5	0.80	2	5	1	Y	1	14	2
14	0.67	2	0.67	1	0.84	3	4	3	N	6	15	4
15	0.78	4	0.78	4	0.91	5	4	3	N	6	22	5
17	0.71	3	0.67	1	0.76	1	4	1	Y	1	7	1
19	0.65	1	0.67	1	0.84	3	5	3	N	6	14	2

*Northwest Florida Beaches International Airport

From **Table 4-21**, it is apparent that of all the alternatives, Alternative 17 is the most efficient in maximizing mobility. It scores best in all categories except reduced travel time to freight transfer facilities, due to the extra leg trucks must travel to reach the Bay County Intermodal Distribution Center. Alternatives 8, 14, and 19, all have nearly the same performance scores, but for different reasons. Alternative 8 is equally as good as Alternative 17 in providing connections to the roadway network and to future planned transportation projects, but performs the worst in providing reduced travel times to freight transfer facilities and for tourists. Alternative 14 is tied with Alternatives 17 and 19 for reduction in travel times for tourists, is second in reducing travel time to freight transfer facilities, but is tied with Alternatives 15 and 19 for worst in providing a connection to future planned transportation projects. Alternative 19 is best in reducing travel time to freight transfer facilities due to the direct connection it provides to the Bay County Intermodal Distribution Center, and is tied with 14 and 17 for the best travel times for tourists. It is tied for worst with Alternatives 14 and 15 in providing connections to future planned projects. Alternative 15 scores last or next to last in all categories.

4.1.4.2 Accessibility

Accessibility is the ability to get to a destination; however, in the transportation profession there are at least two different uses for the term. There is access between the transportation system and adjacent property (which may be affected by access management measures used to control traffic flow for improved operation of the facility and the safety of pedestrians and motorists) and there is access to a desired destination (which is achieved through one or more transportation modes).

Under the No Build Alternative there would be no change in accessibility. The Build Alternatives will be designed to meet the criteria for an Access Management Class III facility which includes restrictions such as 660 feet between driveways. The use of access management measures to improve safety and enhance traffic operations under the Build Alternatives could be perceived by property owners adjoining the roadway as affecting access to their properties. This is more likely to occur in developed areas where access is currently unrestricted. None of the Build Alternatives would prevent access to properties adjacent to the roadway; although access to these properties may be changed by the placement of medians. The only notable difference among the alternatives is that Alternatives 17 and 19 would travel the shortest distance along CR 386 and, therefore would have slightly less opportunity to affect left turning movements to the adjoining properties on CR 386 north of 15th Street.

The Build Alternatives would improve accessibility in another sense. In some areas, the Build Alternatives would divert through traffic from existing roads. The reduction in congestion on those roads within developed areas would result in an improvement in accessibility. The Build Alternatives have been compared by determining the number of neighborhood areas where a reduction in traffic would improve accessibility for each alternative. In the case of St. Joe Beach, this is only accomplished in combination with the implementation of Segment 2 of another new road project, the Gulf to Bay Highway, that is proposed to connect US 98 west of Mexico Beach with US 98 east of St. Joe Beach, intersecting the Gulf Coast Parkway at CR 386 north of Mexico Beach (previously shown on **Figure 4-6)**. See **Table 4-22** for a summary of areas that would benefit from traffic reductions provided by the build alternatives.

Table 4-22: Gulf Coast Parkway Alternatives' Reduction in Traffic in Developed Areas

Alternative	US 98 in Mexico Beach	US 98 in St. Joe Beach (with Gulf to Bay Highway)	CR 386 in Overstreet	Residential Area in Vicinity of US 231 and Star Avenue
No Build	No	No	No	No
8	Yes	Yes	No	No
14	Yes	Yes	No	Yes
15	Yes	Yes	No	Yes
17	Yes	Yes	Yes	No
19	Yes	Yes	Yes	Yes

All Build Alternatives would divert through traffic away from Mexico Beach and, with the implementation of Segment 2 of the Gulf to Bay Highway, from St. Joe Beach, as well. Alternatives 17 and 19 would route high-speed, through traffic heading north and west away from the Overstreet community, while Alternatives 14, 15, and 19 would avoid the neighborhoods in the vicinity of US 231 and Star Avenue. From **Table 4-22,** it is apparent that Alternative 19 provides more benefit than the other alternatives by reducing traffic in all four neighborhoods. Alternatives 14, 15, and 17 improve traffic in three of four neighborhood areas, while Alternative 8 improves traffic in two neighborhood areas.

4.1.4.3 Non-Motorized Transportation Improvements

Although the primary purpose of the Gulf Coast Parkway is not the provision of non-motorized forms of transportation; all the Build Alternatives include the provision of bicycle and pedestrian facilities for the length of the project (see Section 4.3.1 for a description of those facilities), including a shared-use path. The inclusion of these facilities is consistent with Florida Statute 335.065 which states "Bicycle and pedestrian ways shall be given full consideration in the planning and development of transportation facilities …. Bicycle and pedestrian ways shall be established in conjunction with the construction, reconstruction, or other change of any state transportation facility". Gulf County does not have a policy regarding bicycle and pedestrian facilities other than to assess the need to accommodate pedestrian and bicycle traffic on all existing and future road construction project; however, Bay County requires newly created roads to conform to design/construction criteria in their Land Development Regulations, which specifies the installation of sidewalks and/or bikeways in the Urban Service Area when sidewalks and/or bikeways provide or complete a "link" in an existing or planned sidewalk or bikeway system.. The No Build adds no such improvements beyond those currently planned.

The addition of non-motorized means of transportation is another form of mobility improvement. While sidewalks and bicycle lanes rarely reduce travel time, they do offer an alternative mode of transport, reduce travel costs, and provide health benefits. Therefore, the proposed project will be designed and constructed in accordance with the Americans with Disabilities Act Accessibility Guidelines to ensure accessibility of pedestrians and other non-motorized populations have access to the proposed facility

4.1.5 Aesthetics

The word aesthetics, as it applies to a place, is associated with the sense of beauty that is derived from being in, or viewing, that place. Thus, to determine the effect a transportation project may have on the aesthetics of its proposed location, the degree of change that would occur and how that change would affect the observer's sense of beauty at that location must be evaluated. It should be noted that change in the visual environment is not always a negative, and can be positive, but where negative impacts would occur, design measures can be implemented to offset the adverse effects. When a change in the aesthetics of a place would result from the implementation of a transportation improvement, it is important to create a design that visually integrates the project into the setting.

The aesthetic effects of the Gulf Coast Parkway alternatives have been evaluated as part of the SCE of the project alternatives. Since the No Build Alternative does not change the configuration of the existing roads, it would have no affect on the existing aesthetic environment of the study area. The Build Alternatives will alter the visual landscape to greater or lesser degrees depending on the vantage point of the viewer, the existing environment in which the project is located, and the design elements incorporated into the project.

4.1.5.1 Visual Effects

The visual environment of the study area is rich and diverse. It ranges from a coastal mixed use community at the south end to heavily commercial uses at US 98 (Tyndall Parkway) and along US 231. In between, the project alternatives would encounter both forested areas and small rural communities. None of these environments would be affected by the No Build Alternative. The Build Alternatives, however, would at a minimum, modify existing views or, at a maximum, would introduce new elements into the visual landscape, depending on the location along the alignments and the viewpoint of the observer. Whether the changes are perceived as negligible, beneficial or adverse has much to do with the degree of change, the location where the change is occurring, and the viewer's position and time of exposure.

As mentioned in **Section 3.1.4.1**, there are three major viewer groups: drivers and their passengers: residents along the proposed alignment; and waterway users. Viewers that are drivers and/or passengers in vehicles utilizing the road would not be exposed to any one view for more than a few seconds as they travel any of the alignments. For travelers utilizing the proposed Gulf Coast Parkway, the view would be mostly of natural, undeveloped landscapes and therefore pleasing to the eye. Although the alignments begin and end in developed areas that may be less visually appealing than the natural environment, the traveler quickly passes through these areas. In many cases, where the view is industrial or commercial in nature, the effects of the view can be minimized with good engineering design and/or landscaping.

The visual effects experienced by residents or persons viewing the road are potentially greater than those of a traveler passing through the area as these viewers not only see the proposed road as part of the view shed, but may view the road for many minutes or longer. How attractive the view of the road is depends largely on the overall setting in which the road is an element. Improving an existing road may alter the bystander's view of the road but that alteration is not necessarily an adverse effect. Although, an improvement may widen and existing road, bringing more traffic, if the improvement project includes amenities such as sidewalks, landscaping, lighting, etc. the resulting effect may offset any adverse effects. However, when a new road is introduced into what formerly was a completely natural environment the change in the view can be discordant. If there are no bystanders to view the visual environment, they are not affected by the change, but if a new road is constructed behind a subdivision that was previously bordered by woods, the alteration of the visual environment would be a substantial effect.

Because the Gulf Coast Parkway would ultimately provide a four-lane road on a combination of existing and new alignment, there is potential for substantial visual effects. Therefore, a visual effects analysis has been conducted for this project. The methodology used for this analysis was adapted from FHWA's *Visual Impact Assessment for Highway Projects*[19].

In accordance with FHWA's guidance, the various landscape units that comprise the study area were identified. A landscape unit is an area of distinct landscape character which forms a spatially enclosed unit. There are five landscape units for the Gulf Coast Parkway study area, described below and shown on **Figure 4-17**.

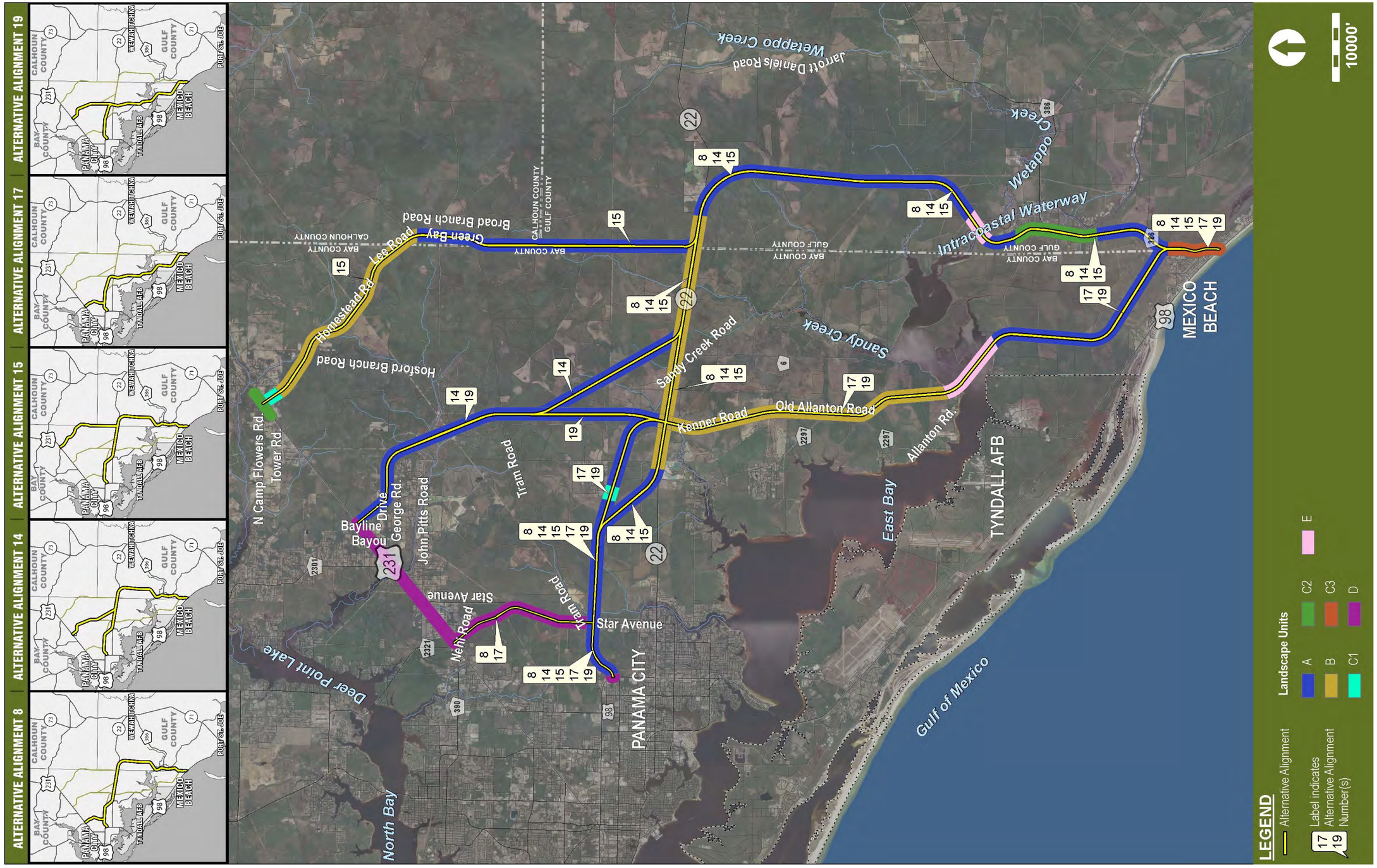
- Landscape Unit A is representative of undeveloped wooded areas which are considered natural as they have no human-created structures within the landscape, although they may have been planted by man (silvicultural areas).

- Landscape Unit B is representative of locations where two-lane paved or unpaved existing roads traverse undeveloped wooded landscapes. These occur principally along SR 22, but also may include roads such as Star Avenue and Tram Road that have little to no development.

- Landscape Unit C is representative of locations where existing roads traverse developed areas that are generally low to medium density residential or mixed use. Landscape Unit C can be divided into subunits, as follows:

  Landscape Unit C-1 represents neighborhoods or subdivisions
  Landscape Unit C-2 represents rural community areas
  Landscape Unit C-3 represents the coastal communities

Figure 4-17: Landscape Units in the Gulf Coast Parkway Study Area



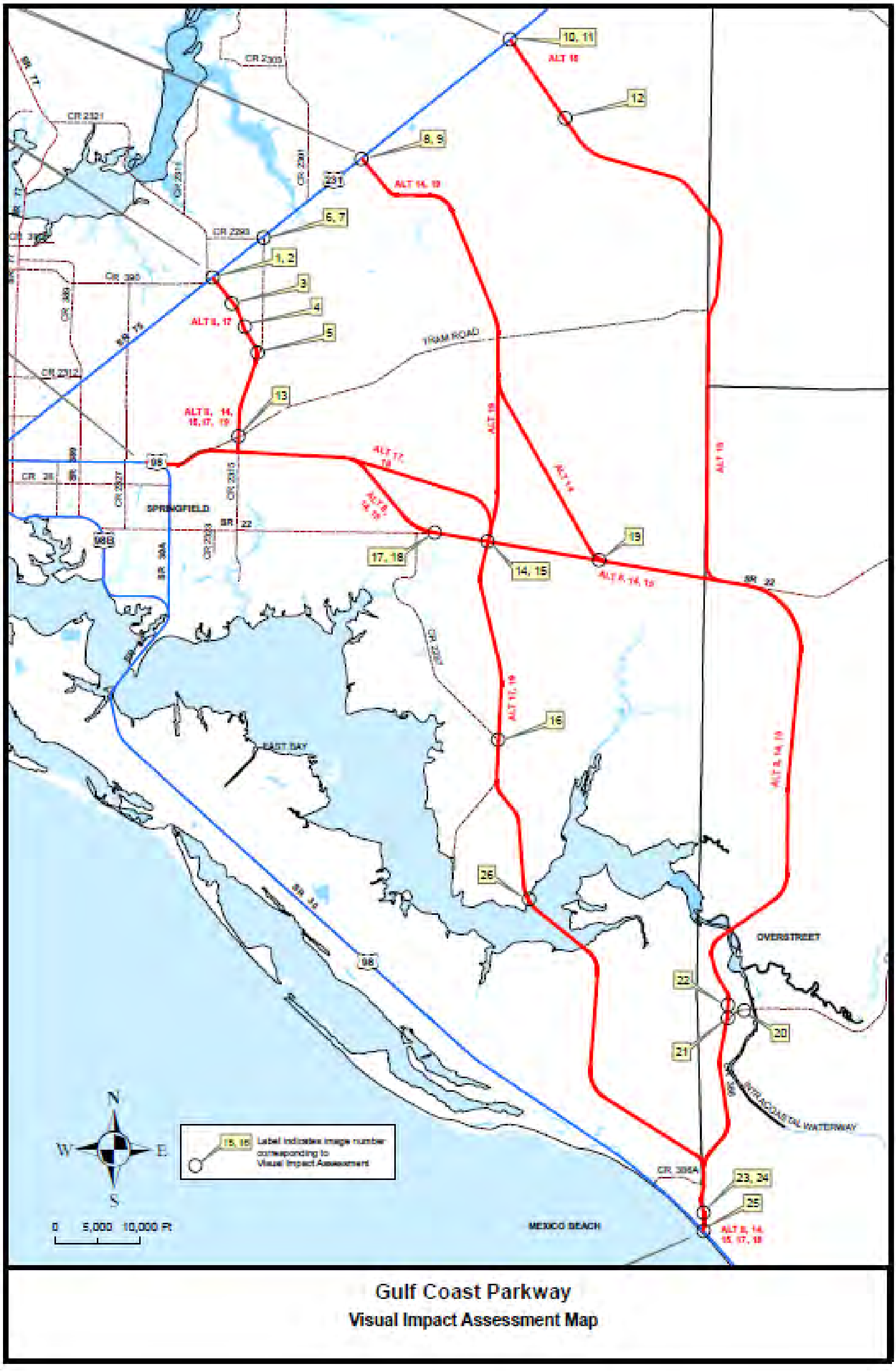
- Landscape Unit D is representative of locations where existing roads traverse heavily commercial or industrial areas.

- Landscape Unit E is representative of the ICWW crossing and includes the waterway and river banks. Beyond the river banks, the landscape is naturally-wooded, in silviculture, or rural farm.

Because it is not feasible to analyze all views in which the proposed project is located, it was necessary to select a number of key viewpoints that represent both the visual environment of the study area and the primary viewer group (motorists or bystanders) potentially affected by the project. The combination of each key view and the landscape units within the view shed for that key view combine to create a visual assessment unit. **Figure 4-18,** shows the locations of visual assessment units analyzed. Each visual assessment unit is evaluated are vividness, intactness and unity. Vividness is the memorability of the visual impression received from contrasting landscape elements as they combine to form a striking and distinctive visual pattern. Intactness is the integrity of visual order in the natural and man-built landscape, and the extent to which the landscape is free from visual encroachment. Unit is the degree to which the visual resources of the landscape unit join together to form a coherent, harmonious visual pattern. Visual assessment work sheets containing pictures of the locations shown in **Figure 4-18** and a table summarizing the evaluation of the visual characteristics (vividness, intactness and unity of the view before and after the proposed project is implemented) are provided in **Appendix M**.

Not all Alternatives would have involvement with all of the visual assessment unit locations. **Table 4-23** presents the visual assessment units encompassed by each alternative and provides the visual assessment scores (from the visual assessment in **Appendix M**) for those units. The total of the visual assessment scores then provides a comparison of the alternatives' involvement with the visual environment.

Figure 4-18: Locations of Visual Assessment Units



Gulf Coast Parkway

Visual Impact Assessment Map

Table 4-23: Alternatives Involvement with Visual Assessment Locations

Visual Assessment Location	Landscape Unit Type	Alternatives				
		8	14	15	17	19
Nehi Rd/US 231	C-2	-1.0			-1.0	
Nehi Rd./College Station	B	-1.7			-1.7	
Cherokee Heights/Nehi Rd.	B	-0.9			-0.9	
Star Ave./Nehi Rd.	B	-1.0			-1.0	
Star Ave./US 231*	D	-1.0	-1.0	-1.0	-1.0	-1.0
Bay Line RR/US 231	D		-0.6			-0.6
Bear Creek Rd/US 231	C-2			-0.6		
Stone Rd/Ed Lee Rd.	B			-1.1		
Star Ave./Tram Rd.	B	-0.8	-0.8	-0.8	-0.8	-0.8
Old Allanton Rd.	B				-0.9	-0.9
CR 2297/Old Allanton Rd.	B				-0.9	-0.9
Alts. 14, 15 at SR 22	B		-1.0	-1.0		
Alt. 8 at SR 22	A	-2.0				
Overstreet Community Park	C-2	-0.7	-0.7	-0.7		
CR 386/Long St.	C-2	-0.7	-0.7	-0.7		
Overstreet Community	C-1	-2.1	-2.1	-2.1		
CR 386 in Mexico Beach	C-4	-0.95	-0.95	-0.95	-0.95	-0.95
CR 386/US 98	C-4	-0.95	-0.95	-0.95	-0.95	-0.95
ICWW Crossing	E	-1.9	-1.9	-1.9	-1.9	-1.9
	Total	**-15.7**	**-10.7**	**-11.8**	**-12.0**	**-8.0**

*Star Avenue/US 231 is also used to represent the intersection of the Gulf Coast Parkway with US 98 Tyndall Parkway. All alternatives would have involvement with the US 98 (Tyndall Parkway) intersection.
**East Bay Crossing also represents the Wetappo Crossing.

From **Table 4-23,** Alternative 19 has the least impact to the visual environment, whereas Alternative 8 would have the most. The No Build Alternative would have no effect on the visual environment.

4.1.5.2 Aesthetic Compatibility

Where the Build Alternatives utilize existing alignments, there will be slight alteration of the visual environment, principally for the bystander, but since the improvement is the same type of element in the landscape as the existing road, any changes will be easily incorporated into the landscape. The most significant visual effects of the project would occur at the high-level bridge crossings. Because the proposed bridges would be in new locations the effect on the visual setting would be startling; however, because the routes are mostly through undeveloped land, except for the area at the north approach to the proposed East Bay Bridge, and the area to the west of Overstreet for the approach to the ICWW/Wetappo crossing, the viewers of the setting are likely to be passengers on boats traversing the waterways. Because they pass other such bridges and because boat traffic doesn't stay long in a single location, the effect would be temporary and not out of character with other high-level bridge crossings.

For the residential areas where the proposed project would introduce a new road into a rural environment, such as the area to the west of Overstreet that is near the new alignment approach to the ICWW/Wetappo Creek crossing, the affect on the view shed could be adverse. The north approach to the bridge across East Bay would introduce a new element into the landscape as seen from the Century Farm (Allanton Farmstead), but the State Historic Preservation Officer (SHPO) has determined that the bridge, as currently planned, will not adversely affect the historic character of this resource. Therefore, all alternatives have some limited effect on the visual environment for viewers of the facility.

Alteration of the visual environment is not necessarily a negative effect and can be an improvement, especially when accompanied by landscaping and other beautification measures. To ensure that the proposed project is compatible and consistent with community vision, the development of the project is being conducted consistent with FDOT's Context Sensitive Solutions Policy (000-650-002).

4.1.6 Relocation and Displacement Impacts

The proposed project would require the acquisition of between 108 and 154 parcels, depending on the alternative. The potential for the relocation of residences and businesses was reviewed as part of the SCE. As stated previously, the majority of the Gulf Coast Parkway would be through rural, undeveloped land which allowed alternatives to minimize impacts to residential areas. However, where the Build Alternatives utilize existing road alignments and the existing right-of-way is insufficient for the proposed improvements, acquisition of right-of-way from adjoining property would be necessary. In some cases, this acquisition would result in potential relocations. **Table 4-24** shows the number and type of relocations associated with each Build Alternative and **Table 4-25** provides the estimated right-of-way and relocation costs. The No Build Alternative would not require right-of-way acquisition; therefore, the No Build Alternative would have no relocations.

Table 4-24: Summary of Right-of-way Acquisition and Relocations by Alternatives

	Alternatives					
	No Build	8	14	15	17	19
Parcels Acquired						
Vacant	0	81	80	77	61	60
Residential	0	57	57	57	32	32
Commercial	0	16	17	15	15	16
Total Parcels Acquired	**0**	**154**	**154**	**149**	**108**	**108**
Relocations by Type						
Residential Owner	0	17	17	17	12	12
Residential Tenant	0	15	15	15	14	14
Commercial	0	3	4	3	3	4
Total Relocations	**0**	**35**	**36**	**35**	**29**	**30**

Table 4-25: Estimated Right-of-Way and Relocation Costs

Type of Cost	Alternatives					
	No Build	8	14	15	17	19
Business Relocation	$0	$150,000	$200,000	$150,000	$150,000	$200,000
Owner Relocation	$0	$527,000	$527,000	$527,000	$372,000	$372,000
Tenant Relocation	$0	$108,000	$108,000	$108,000	$100,800	$100,800
Right-of-way Acquisition	$0	$41,915,000	$45,765,000	$47,415,000	$44,077,200	$47,227,200
Total Cost	**$0**	**$42,700,000**	**$46,600,000**	**$48,350,000**	**$44,700,000**	**$47,900,000**

All of the Build Alternatives would require both residential and business relocations. Alternative 17 has the least number of relocations with 26 residential and three businesses. Alternative 19 has the next least relocations with 26 residential and four businesses. Alternative 8 and 15 have 32 residential relocations and three business relocations, while Alternative 14 would have the most displacements with 33 residential and four business relocations. The No Build Alternative would have no relocations.

This information has been documented in a Conceptual Stage Relocation Plan, which also provides data on replacement property and relocation assistance.

Comparable replacement housing for sale and rent is available in the study area. However, there may be some last resort rent supplements and last resort replacement housing payments necessary. Last resort housing payments would be used in order to place the relocates in decent, safe, and sanitary housing, if necessary. Should last resort housing be constructed, the housing would be available before the displacees are required to vacate their dwellings. There are numerous residential lots available for new construction within the study area.

In order to minimize the unavoidable effects of right-of-way acquisition and displacement of people, the FDOT will carry out a Right-of-Way and Relocation program in accordance with Florida Statute 339.09 and the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970*[20], as amended.

The FDOT provides advance notification (AN) of impending right-of-way acquisition. Before acquiring right-of-way, all properties are appraised on the basis of comparable sales and land use values in the area. Owners of property to be acquired will be offered and paid fair market value for their property rights.

No person lawfully occupying real property will be required to move without at least 90 days written notice of the intended vacation date, and no occupant of a residential property will be required to move until decent, safe and sanitary replacement housing is made available. "Made available" means that the affected person has either by himself obtained and has the right of possession of replacement housing, or that the FDOT has offered the relocatee decent, safe and sanitary housing which is within his financial means and available for immediate occupancy.

At least one relocation specialist is assigned to each highway project to carry out the relocation assistance and payments program. A relocation specialist will contact each person to be relocated to determine individual needs and desires, and to provide information, answer questions, and give help in finding replacement property. Relocation services and payments are provided without regard to race, color, religion, sex, or national origin.

All tenants and owner-occupant displaces will receive an explanation regarding all options available to them, such as 1) varying methods of claiming reimbursement for moving expenses; 2) rental replacement housing, either private or publicly subsidized; 3) purchase of replacement housing; and 4) moving owner-occupied housing to another location.

Financial assistance is available to the eligible relocate to:

1) Reimburse the relocate for the actual reasonable costs of moving from homes, businesses, and farm operations acquired for a highway project.

2) Make up the difference, if any, between the amount paid for the acquired dwelling and the cost of a comparable decent, safe and sanitary dwelling available on the private market.

3) Provide reimbursement of expenses, incidental to the purchase of a replacement dwelling.

4) Make payment for eligible increased cost resulting from having to get another mortgage at a higher interest rate. Replacement housing payments, increased interest payments, and closing costs are limited to $22,500 combined total.

A displaced tenant may be eligible to receive a payment, not to exceed $5,250, to rent a replacement dwelling or room, or to use as down payment, including closing costs, on the purchase of a replacement dwelling.

The brochures that describe in detail the FDOT's relocation assistance program and right-of-way acquisition program are "Your Relocation: Residential", "Your Relocation: Business, Farms and Nonprofit Organizations", "Your Relocations: Signs", and "The Real Estate Acquisition Process". These brochures are distributed at all public hearings and made available upon request to any interested persons.

4.2 CULTURAL RESOURCES

Cultural resources include archaeological and historical resources and recreational facilities. The analysis of the potential impacts to the cultural resources identified in Section 3 of this report is discussed below.

4.2.1 Archaeological and Historical

After ETAT review of the proposed project in the EST, the Florida Department of State (FDOS), the FHWA, and the Miccosukee Tribe of Indians of Florida responded with the following comments concerning archaeological and historical resources (comments and responses presented in Appendix I):

- *FDOS – A Cultural Resource Assessment Survey is needed. A National Register-listed resource is located within the 100-foot project buffer, and several archaeological sites are located within the one-mile buffer.*
- *FHWA – National Register of Historic Places (NRHP) eligibility and determination of effects (DE) for identified resources is needed. NRHP resources should be avoided in accordance with Section 106 and 4(f) requirements.*
- *Miccosukee Tribe of Indians of Florida – A Cultural Resources Survey is needed to determine effects.*

A Cultural Resource Assessment Survey and DE have been completed. Unless the results of an underwater survey in East Bay, to be conducted after selection of a preferred alternative, should alter the current findings the FHWA has determined that there would be no adverse effect eligible or listed National Register properties. The results of the assessment findings are presented in summary form in Sections 3.3.1, 3.3.2, and below. Based on the foregoing, and the fact that there would be no involvement with publicly-owned parks, recreation sites, or wildlife and waterfowl refuges, there would be no use of resources protected by Section 4(f).

In accordance with the procedures contained in 36 Code of Federal Regulations (CFR), Part 800, a Cultural Resource Assessment Survey (CRAS), including background research and a field survey, has been completed for this project. This survey was designed to locate any previously unrecorded archaeological and historical sites that may be present in the Area of Potential Effect (APE), relocate any previously recorded sites, delineate and update individual site information for each archaeological and historical site encountered and preliminarily evaluate the significance of these resources in accordance with the criteria contained in Section 106 of the National Historic Preservation Act of 1966, as amended by Public Law 89-655; the Archaeological and Historic Preservation Act, as amended by Public Law 93-291; Executive Order 11593; Chapter 267, Florida Statutes (FS), Rule Chapter 1A-46, Florida Administrative Code (FAC); the Florida Division of Historical Resources (FDHR) *Cultural Resource Management Standards and Operations Manual, Module Three: Guidelines for use by Historic Preservation Professionals*[21], and Part 2, Chapter 12 of the FDOT's *Project Development and Environment Manual*[22]*;* and the *Cultural Resource Management Handbook*[23] (revised August 2003). The APE for this project, which addressed direct and indirect effects, is considered to be the Gulf Coast Parkway project which consists of five proposed alternatives all roughly located east of Panama City and north of Mexico Beach, in Bay, Calhoun, and Gulf Counties. An alternative consists of the right-of-way footprint [approximately 160 feet (49 meters) wide to 240 feet (73 meters) wide]. The vast majority of the project alternatives pass through undeveloped tracts. In such instances the APE was the 250-foot wide alignment. However, where the alternatives were along existing paved roadways or in communities such as Mexico Beach or Overstreet, the APE was defined as the existing right-of-way to the back line of the adjacent parcel.

The fieldwork for the CRAS included a thorough reconnaissance and subsurface testing of the proposed alignments. **Table 4-26** summarizes the results of that assessment. **Figure 4-19** provides the location of historic properties evaluated during the CRAS as well as the location of those previously recorded in the general vicinity of the project alternatives.

Table 4-26: Historic Sites within the Vicinity the Gulf Coast Parkway Build Alternatives

Site Number	Name	Site Type	Alternatives Involved	National Register of Historic Place (NRHP) Eligible	Direct Impact
8BY1348	Allanton Farmstead (Century Farm)	Resource Group	17, 19	Eligible	No
8BY1349	1011 CR 386	Structure	8, 14, 15	Not Eligible	No
8BY1362	Kent Cemetery	Cemetery	14, 19	Insufficient Information (Protected)	No
8BY1364	Kent/Majette	Archaeological Site	14, 19	Insufficient Information	Yes
8BY1365	Tram Road	Linear (Resource Group)	8, 14, 15, 17, 19	Not Eligible	Yes
8BY1366	Atlanta and St. Andrews Bay Railroad	Linear (Resource Group)	8, 14, 15, 17, 19	Eligible	Yes*
8BY1515	Kent/Majette Tram	Linear (Resource Group)	8, 14, 15, 17, 19	Not Eligible	Yes
8CA212	Lloyd Hall Homestead	Archaeological Site	15	Not Eligible	Yes
8GU186	130 Post Office Lane (Overstreet)	Structure	14, 15	Not Eligible	No
8GU187	Overstreet Firetower	Structure	14, 15	Eligible	No
8GU188	280 N. Canal Drive (Overstreet)	Structure	14, 15	Not Eligible	No
8GU189	280 N. Canal Drive (Overstreet)	Structure	14, 15	Not Eligible	No
8GU190	445 Floating Bridge Road (Overstreet)	Structure	14, 15	Not Eligible	No
8GU191	3320 CR 386	Structure	8, 14, 15	Not Eligible	No
8GU192	3417 CR 386	Structure	8, 14. 15	Not Eligible	No
8GU193	Old Overstreet Church/ School	Structure	14, 15	Eligible	No

*The historic elements of this linear resource (rails, ties and ballast) have been replaced over the years. The significance lies in the railroad's relationship to the development of the region and therefore its alignment. This project will not alter the alignment of the railroad corridor nor will it impede the operation of the railroad. On June 1, 2012, SHPO determined that 8BY1366 is eligible for listing in the *National Register of Historic Places* and based on the location and nature of the undertaking concurred that no historic properties will be affected by the proposed project.

Figure 4-19: Location of Historic Properties in Vicinity of Gulf Coast Parkway Alternatives

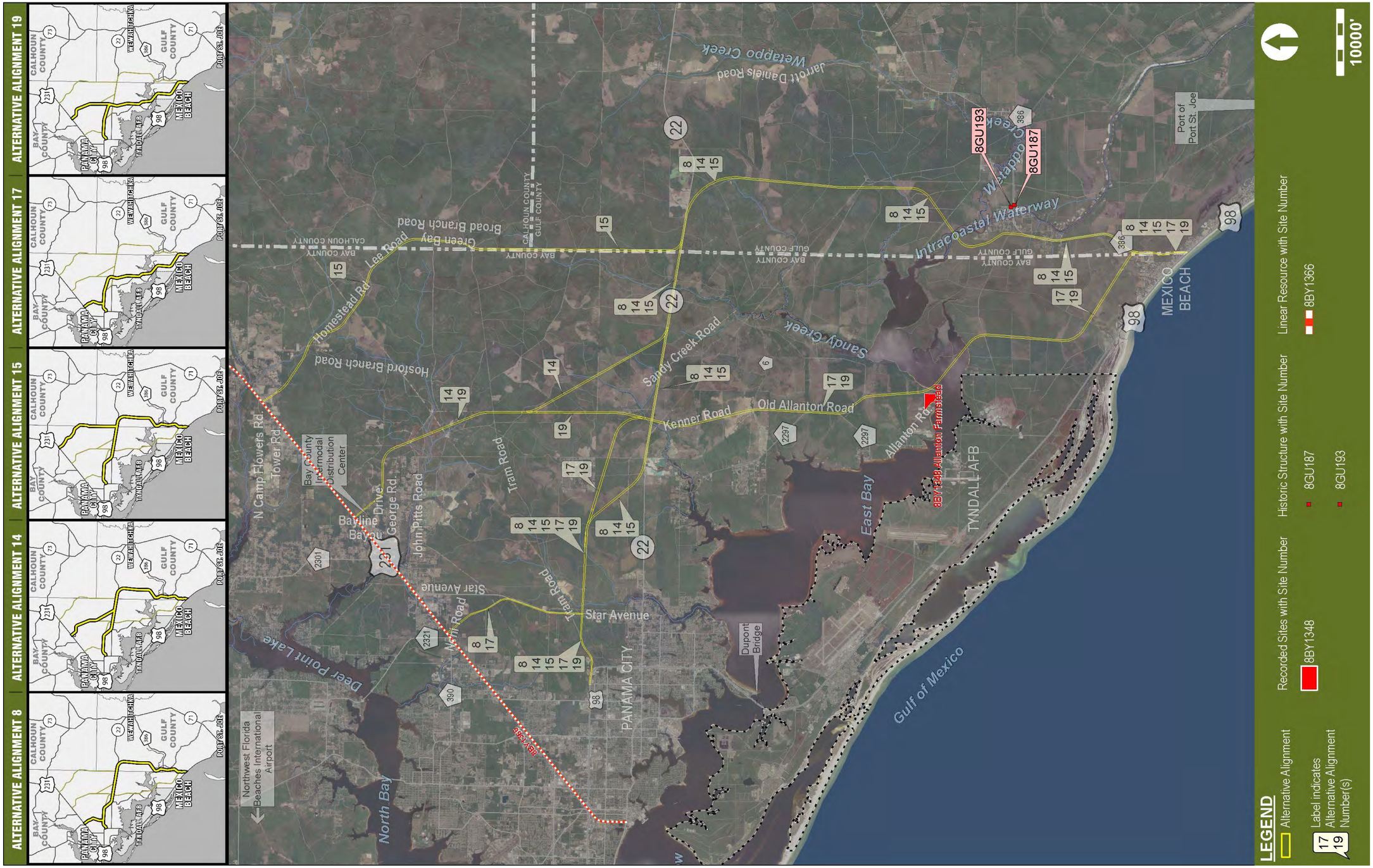
Four historic properties within the Gulf Coast Parkway study area have been preliminarily identified as being eligible for listing on the NRHP: Allanton Farmstead (8BY1348), the Atlanta and St. Andrews Railroad (8BY1366), Overstreet Firetower (8GU187), and Old Overstreet Church School (8GU193).

Since the initial assessment, the project alternatives have been refined and there would be no involvement with resources on **Table 4-26** that have been determined eligible for listing on the NRHP. Alternatives 17 and 19, which formerly had potential for involvement with Allanton Farmstead (8BY1348) from the high-level bridge crossing East Bay, have had their alignment modified to avoid acquiring right-of-way from the farmstead (8BY1348). The other resources, with which the alternatives would have potential involvement, were either determined ineligible for the NRHP or there was insufficient information to make a determination.

Based on the information gathered, the CRAS report[24] concluded that potential involvement with a cultural resource site-listed or eligible for listing on the NRHP would occur to the Allanton Farmstead (8BY1348) under Alternatives 17 and 19, and the Atlanta and St. Andrews Bay Railroad (8BY1366) under any Build Alternative. Neither Alternative would require right-of-way from the sites; however, due to the location of Allanton Farmstead (8BY1348) on the end of Allanton Point near where the proposed high-level bridge across East Bay under Alternatives 17 and 19 would start its return to grade, the project could create a potential visual impact on the setting of the Farmstead. Meetings were held with SHPO staff to discuss potential visual effects to the Allanton Farmstead (8BY1348). In June 2012, SHPO determined the project would have no effect on significant historic properties (see SHPO letter dated June 1, 2012 in **Appendix J**). However, they did request further consultation after a preferred alternative has been identified to address potential effects to submerged resources at the East Bay crossing. The SHPO also indicated that there is insufficient information available to determine the significance of the Kent Cemetery (8BY1362) and Kent/Majette (8BY1364). The Kent Cemetery is over 400 feet from a project alternative and will not be affected by project activities. Please note that the cemetery is protected under Florida Statute. No conclusive evidence or intact cultural deposits related to this historic town of Kent/Majette (8BY1365) were located in the project alternatives' alignments during the cultural resources field survey. This site, as it exists within the proposed alternatives, is not significant. SHPO determined that this project would have no effect to historic properties (see SHPO letter dated June 1, 2012 in **Appendix J**). None of the remaining alternatives, including the No-Build Alternative, have involvement with cultural resources.

In accordance with the procedures contained in 36 CFR, Part 800, a cultural resources assessment, including background research and a field survey coordinated with the SHPO, was performed for the project. As a result of the assessment, four sites [Allanton Farmstead (8BY1348), Atlanta and St. Andrews Bay Railroad (8BY1366), Overstreet Firetower (8GU187), and Old Overstreet Church/School (8GU193)] were determined eligible for listing on (or listed on) the NRHP (see **Figure 4-20**). Through the application of the Criteria of Adverse Effect, the FHWA, in consultation with the SHPO, determined that the proposed high level bridge crossing East Bay under Alternatives 17 and 19 did not constitute an adverse effect on the Allanton Farmstead (8BY1348), nor did the crossing of the Atlanta and St. Andrews Bay Railroad (8BY1366) by all build alternatives, constitute an adverse effect on the Atlanta and St. Andrews Bay Railroad (8BY1366). The SHPO also requested further consultation regarding underwater historic properties when a preferred alternative is selected. In October 2012, Southeastern Archaeological Research, Inc. (SEARCH) completed a maritime archaeology desktop evaluation for this project. SEARCH's study area consisted of a 1,000-foot buffer at locations where the project alternatives crossed a perennial water body. Based on the results of this assessment, Alternatives 8, 14, and 15 were determined to have a low potential for submerged cultural resources. Alternatives 17 and 19 have a moderate probability due their crossing at East Bay and the history of marine traffic in the area. SEARCH concluded that if Alternative 17 or 19 were selected as the preferred alternative, a remote-sensing survey should be conducted of the corridor over East Bay. No further investigations were recommended for Alternatives 8, 14 and 15. The complete technical memorandum for the desktop assessment is available in **Appendix N.** Since Alternative 17 is being recommended as the preferred alternative, FDOT is currently conducting the underwater field investigation of the East Bay crossing.. The results of this investigation and coordination with the SHPO will be documented in the Final EIS.

Figure 4-20: Sites Listed on or Eligible for Listing on the National Register of Historic Properties



4.2.2 Recreational/Parkland

After ETAT review of the project in the EST, the FHWA and the Florida Department of Environmental Protection (FDEP) responded with the following comments concerning recreational areas (comment and response presented in Appendix I):

- *FHWA – Crossings of the ICWW Canoe Trail could result in Section 4(f) use; impacts should be coordinated with FHWA.*
- *FDEP – Documentation should include primary, secondary, and cumulative impacts to natural communities, wildlife corridor functions, natural flood control, stormwater runoff filtering capabilities, aquifer recharge potential, contributions to regional spring complexes, and recreational trail opportunities.*

The FDEP Office of Greenways and Trails has confirmed that there is no designated ICWW Canoe Trail in the study area, see below. Cumulative effects are addressed in Section 4.3.19 of this report.

Recreation facilities and parklands in the study area are listed in **Table 3-17** and shown on **Figure 3-14**. Although the Planning Screen in EST identified a canoe trail in the ICWW, and although there is nothing to prevent canoeists from paddling on the ICWW, the FDEP Office of Greenways and Trails has confirmed there is no designated ICWW Canoe Trail in the study area. A review of the interactive map, *2008 Prioritized Multi-use and Paddling Trails Opportunity Map*[25], shows as a long-term goal a potential paddling trail along the ICWW.

The crossing of the ICWW by the Gulf Coast Parkway, whether at East Bay or at Wetappo Creek, would be on a high level bridge, therefore, the Gulf Coast Parkway would have no affect the use of the ICWW by canoeists except as another element in the visual environment, similar to the Du Pont and Overstreet bridges. There could be some disruption of boat traffic on the ICWW during construction of the bridge, but this would be coordinated with United States Coast Guard (USCG) and a notice to mariners would be made in advance of any conflicts with usage of the waterway. These conflicts, should they occur, would be short-term in duration and minimized to the extent feasible.

4.2.3 Section 4(f)

Section 4(f) of the Department of Transportation Act of 1966 (Title 49, United States Code (USC), Section 1653 (f), amended and recodified in Title 49, USC, Section 303, in 1983), applies to any publicly owned parks, recreation areas, wildlife or waterfowl refuges of national, state, or local significance or publicly or privately owned significant historic properties. The Secretary of the United States Department of Transportation (USDOT) shall not approve any transportation program or project that requires the use of Section 4(f) land unless: 1) there is no feasible and prudent alternative to the use of such land; and 2) such action includes all possible planning to minimize harm to such park, recreational area, wildlife or water fowl refuge, or historic site resulting from such use.

As indicated in the previous discussions, the proposed alternatives would have no involvement with any publicly owned parks, recreation areas, wildlife or waterfowl refuges nor any adverse effect on historic properties listed on or determined eligible for listing on the NRHP, no Section 4(f) evaluation is required. FHWA confirmed on January 16, 2014 that Section 4(f) does not apply to the proposed ICWW canoe trail.

4.3 NATURAL AND PHYSICAL IMPACTS

The following discusses the involvement of the project alternatives with the natural and physical environments in the study area.

4.3.1 Pedestrian/Bicycle Facilities

The only existing bicycle and pedestrian facilities in the study area are paved shoulders along US 231, US 98 and SR 22. The Bay County Comprehensive Plan Policy has two policies regarding bicycle and pedestrian ways: to work through the TPO to implement and maintain recommendation and projects set forth in the Panama City Metropolitan Organization Bicycle/Pedestrian Plan and to establish priorities for the location of bicycle/pedestrian facilities. The Gulf County Comprehensive Plan Chapter 2 Policy 1.1.1states that "The County will assess the need to accommodate pedestrian and bicycle traffic on all existing and future road construction projects" and Chapter 7 Policy 3.2 states: "The expansion of recreation and open spaces to include the expansion and development of green spaces and trails…ultimately linking together the preservation and recreations spaces of Gulf County within the scope of financial and physical resources".

The analysis of bicycle and pedestrian facilities has been conducted in accordance with 23 USC 109(n) which requires any project for resurfacing, restoring, or rehabilitating any highway, other than a highway access to which is fully controlled, in which Federal funds participate shall be constructed in accordance with standards to preserve and extend the service life of highways and enhance highway safety. Therefore, the proposed bicycle/pedestrian facilities will be designed in accordance with the *Florida Bicycle Facilities Planning and Design Handbook* and the standards of the American Association of State Highway Transportation Officials. Further, the proposed project will be designed and constructed in accordance with the Americans with Disabilities Act Accessibility Guidelines to ensure accessibility of pedestrians and other non-motorized populations have access to the proposed facility.

The No Build Alternative would not provide any bicycle or pedestrian facilities beyond those currently planned. All of the Build Alternatives would provide bicycle and pedestrian facilities for both the interim and the ultimate designs for the length of the project. The type of bicycle/pedestrian facilities depends on the typical section (refer to **Figures 2-10** through **2-13**).

The interim rural typical section includes a 12-foot wide multi-use trail along the initial two-lane roadway and the initial two-lane bridge. The interim urban typical section includes a six-foot six–inch bike lane and a five-foot sidewalk along the road. The interim bridge would provide a 10-foot shoulder and five-foot sidewalk. The ultimate rural roadway and bridge typical section would not add any additional pedestrian facilities. The ultimate urban roadway typical section provides a six-foot six-inch wide bike lane and a five-foot sidewalk in both directions and the urban bridge typical section includes a 10-foot shoulder with a five-foot wide sidewalk on each bridge.

Table 4-27 lists those bicycle and pedestrian projects identified in the *Bicycle and Pedestrian Master Plan*[26] and the Bay County TPO's LRTP *Direction 2035-Shaping Our Future*[15] that have direct or indirect connections to the Gulf Coast Parkway Build Alternatives. **Figure 4-21** shows the locations of these projects in relation to the proposed project's alternatives.

Where the project alternatives overlap the existing paved shoulder of SR 22 (Alternatives 8, 14, 15, and 17) it would provide an improvement to the existing pedestrian/bicycle facility by providing a shared-use path offset at a distance from the roadway. The project alternatives' interaction with other existing bicycle/pedestrian facilities (the paved shoulders of US 231 and US 98) would be limited to the intersection improvements provided by the Gulf Coast Parkway intersection with those roadways.

The connections created by the Gulf Coast Parkway would improve the overall connectivity of the bicycle and pedestrian system. All Gulf Coast Parkway Build Alternatives would provide direct connections to three planned bicycle and pedestrian projects and indirect connections to two other planned projects; however, Alternative 8 and 17 provide five additional direct connections (one of which is two projects connecting at US 231) and two additional indirect connections to planned bicycle and pedestrian projects. Further, the connections provided by

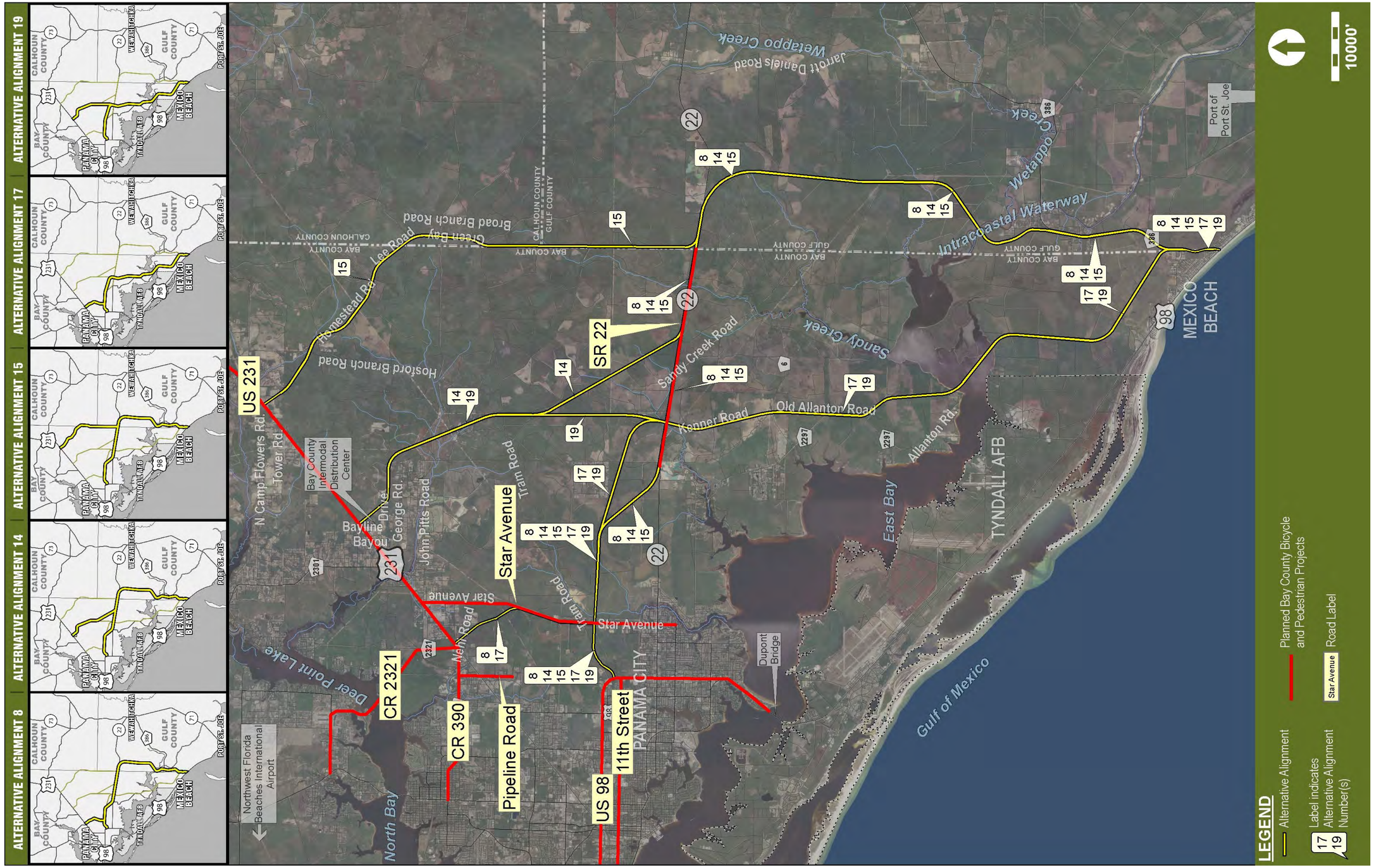
Alternatives 8 and 17 connect the area on the southeast side of US 231 with the area on the northwest side of US 231, whereas Alternatives 14, 15, and 19 connections to planned bicycle and pedestrian projects are located solely on the southeast side of US 231 and mostly within the Tyndall Parkway area. Therefore, Alternatives 8 and 17 not only provide more connections to planned bicycle and pedestrian projects, but also improve the network by connecting different areas.

Table 4-27: Gulf Coast Parkway Connections to Planned Bay County Bicycle and Pedestrian Projects

Bay County Bicycle/ Pedestrian Project	Proposed Improvement	Alternative				
		8	14	15	17	19
US 98 from Hathaway Bridge to Du Pont Bridge	Bike Lanes & Sidewalks	X	X	X	X	X
11th Street from Beck Avenue to Tyndall Parkway	Bike Lanes	X	X	X	X	X
CR 390 from SR 77 to US 231	Bike Lanes & Sidewalks	X			X	
CR 2321 from SR 77 to US 231	Bike Lanes	X			X	
11th Street from Sherman Avenue to Tyndall Parkway	Sidewalks	X	X	X	X	X
Star Avenue from Cherry Street to United States 231	Bike Lanes & Sidewalks	X	X	X	X	X
Crayfish Trail from United States Air Force Petroleum Depot to US 231	Bike Lanes & Sidewalks	X			X	
Cato Road from US 231 to CR 390	Bike Lanes & Sidewalks	X			X	
Crayfish Trail from US 231 to Hilltop Lane	Bike Lanes & Sidewalks	X			X	
Pipeline Road from Country Lake Drive to CR 390	Bike Lanes & Sidewalks	X			X	
Bay County 2035 LRTP	**Proposed Improvement**	**Alternative**				
		8	**14**	**15**	**17**	**19**
SR 30A/US 98 (15th Street) from Transmitter Road to SR 22	Bike Lanes & Sidewalks	X	X	X	X	X
SR 75 (US 231) from CR 390 to Star Avenue	Bike Lanes & Sidewalks	X			X	
SR 75 (US 231) from Star Avenue to Jonny Lane	Bike Lanes & Sidewalks		X			X
SR 75 (US 231) from Jonny Lane to Jadewood Circle	Bike Lanes & Sidewalks			X		
CR 2315 (Star Ave) from Wewa Highway to US 231	Bike Lanes & Sidewalks	X			X	
SR 22 from Bay County Urbanized Boundary to the Gulf County Line	Bike Lanes & Sidewalks	X	X	X		

Note: Projects in blue font do not connect directly with the facilities provided by Gulf Coast Parkway but are in the vicinity of project, and through other existing or planned improvements contribute to the overall network of pedestrian and bicycle facilities.

Figure 4-21: Build Alternatives' Relationship to Bicycle and Pedestrian Projects in the Study Area



4.3.2 Air Quality

An air quality evaluation, specifically an analysis of carbon monoxide (CO) concentrations, was performed in accordance with FDOT's *PD&E Manual,* Part 2, Chapter 16[27]. The air quality analysis is documented in the *Air Quality Analysis for the Gulf Coast Parkway, Bay County*[28] and *the Air Quality Analysis for the Gulf Coast Parkway, Gulf County*[29] (both dated 10/16/12).

4.3.2.1 Carbon Monoxide

The project alternatives were subjected to the COFlorida2012 screening model that makes various conservative worst-case assumptions related to site conditions, meteorology, and traffic. The FDOT current screening model, COFlorida 2012 (released April 2013) uses the latest United States Environmental Protection Agency (USEPA) - approved software (*MOBILE6 and CAL3QHC*) to produce estimates of one-hour and eight-hour CO at default air quality receptor locations. The one-hour and eight-hour estimates can be directly compared to the one-and eight-hour *National Ambient Air Quality Standards*[30] *(NAAQS)* for CO that is 35 parts per million (ppm) and 9 ppm, respectively.

A worst-case approach was used during the air quality evaluation. The premise of this approach is that if the NAAQS are not exceeded under worst-case conditions, then there will not be air quality impacts due to the project at any location. For example, COFlorida2012 has worst-case defaults for background CO and temperature depending on the region where the project is located. With a suburban land use, all predictions include a background CO concentration of 3.3 ppm for a 1-hour averaging time and 2.0 ppm for an 8-hour averaging time.

The intersection analyzed is the proposed CR 386/US 98 Intersection in Gulf County and US 98/Tram Road Intersection in Bay County, which has the combination of the highest intersection approach volume and lowest approach speed.

CO levels are highest near travel lanes where pollutants are emitted while concentrations decrease as the distance from the roadway increases. As a worst-case scenario, CO concentrations were predicted at reasonable receptor sites in closest proximity to the intersections. A reasonable receptor site is an area where people can be expected to spend a period of time comparable to the 1-hour and 8-hour averaging times used in establishing the NAAQS for CO.

The predicted CO concentrations for the No Build and Build conditions during the project's opening year (2025) and design year (2035) are provided in **Table 4-28**

Table 4-28: Predicted Worst-Case CO Concentrations at Key Intersections

Year	Condition	Intersection	Co Concentration (Parts Per Million)	
			1-Hour Averaging Time	8-Hour Averaging Time
2025	No Build	CR 386/US 98	5.0	3.0
	Build		5.0	3.0
2035	No Build	CR 386/US 98	5.1	3.1
	Build		5.4	3.3
2025	No Build	US 98/Tram Road Intersection	6.6	4.0
	Build		6.7	4.0
2035	No Build	US 98/Tram Road Intersection	6.9	4.2
	Build		7.1	4.3

All predicted CO concentrations for the opening and design years are below the 1-hour NAAQS of 35 parts per million and the 8-hour NAAQS of 9 parts per million.

The project is in an area that has been designated by the USEPA as attainment for all the NAAQS. Therefore, the transportation conformity rule (40 CFR Part 93) does not apply. However, the FDOT is aware of the proposed USEPA rule change. The potential for air quality impacts under the revised rules will be reevaluated during design once the rule changes are finalized and Bay County has established air quality standards.

Evaluating the environmental and health impacts from Mobile Source Air Toxics (MSATS) on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling in order to estimate ambient concentrations resulting from the estimated emissions, exposure modeling in order to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the Mobile Source Toxics (MSAT) health impacts of this project.

4.3.2.2 Mobile Source Air Toxics

In addition to the criteria air pollutants for which NAAQS have been promulgated, the USEPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g. air planes), area sources (e.g. dry cleaners) and stationary sources (e.g. factories and refineries). MSATs are a subset of the 188 air toxics defined in the Clean Air Act (CAA). The MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The USEPA is the lead Federal agency for administering the CCA and has certain responsibilities regarding the health effects of MSATs. The USEPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources. 66 Federal Register (FR) 17229 (March 29, 2001). This rule was issued under the authority in Section 202 of the CCA. In its rule, the USEPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline (RFG) program, its national low emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and\gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Between 2000 and 2020, even with a predicted 64 percent increase in vehicle miles traveled (VMT) on FHWA projects, on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde are expected to be reduced by 57 to 65 percent. In addition, on-highway diesel Particulate Matter (PM) emissions are expected to be reduced by 87 percent. As a result, the USEPA concluded that no additional motor vehicle emissions standards or fuel standards were necessary to further control MSATs. The agency is preparing another rule under authority of CAA Section 202(1) that will address these issues and could make adjustments to the full 21 and/or the six primary MSATs.

According to traffic data presented in the project's traffic analysis report, Build Alternative Average Annual Daily Traffic (AADT) traffic volumes on the existing road segments analyzed are predicted to range from slightly lower to somewhat higher than the No Build levels, depending on the Build Alternative under consideration. In addition, some Build Alternative traffic speeds on some road segments are predicted to be higher than the No Build Alternative speeds during the same period. For the sixteen road segments analyzed in the Design Year (2035), under Alternatives 8 and 17, 87.5 percent of the road segments would be at LOS C or above while under Alternatives 14, 15, and 19, 56.3 percent of the road segments would operate at LOS C or above. In comparison, in the Design Year (2035) under the No Build Alternative only 25 percent of the road segments analyzed would operate at LOS C or better. Based on this data, the project is expected to result in reduced congestion levels.

For alternatives presented in the Environmental Impact Statement (EIS), the amount of MSATs emitted would be proportional to the VMT, assuming that other variables such as fleet mix are the same for each alternative. The VMT of the Build Alternatives is expected to be only slightly higher than that for the No Build Alternative, because additional capacity increases the efficiency of the roadways, reduces congestion and increases vehicle speeds. This increase in VMT would normally lead to higher overall Build Alternative MSAT emissions along the highway corridor. However, this overall increase is expected to be somewhat offset by lower MSAT emission rates due to increased vehicle speeds since emissions of all of the priority MSATs except for diesel PM decrease as speed increases, according to the USEPA's Mobile6.2 model. The extent to which these speed-related emissions decreases will offset increases related to higher VMTs cannot be reliably projected due to the inherent deficiencies of available technical models. Because the estimated VMT of the No Build and Build Alternatives are nearly the same, it is expected there would be no appreciable difference in overall MSAT emissions between the alternatives. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of the USEPA's national control programs that are projected to reduce annual MSAT emissions by 72 percent between 1999 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the USEPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The additional travel lanes contemplated as part of the project alternatives will have the effect of moving some traffic closer to nearby air quality receptors; therefore, under each alternative there may be localized areas where ambient concentrations of MSAT could be higher with the Build Alternative than the No Build Alternative. The localized increases in MSAT concentrations at air quality receptors along the alternative alignments would likely be most pronounced along roadway sections that would be built along CR 386 in Mexico Beach and Overstreet areas and in the vicinity of the project termini at US 98 (Tyndall Parkway) and US 231 at Nehi Road, US 231 at Bayline Drive, and US 231 at North Camp Flowers Road. However, the magnitude and the duration of these potential increases compared to the No Build alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. In summary, when transportation capacity improvements are made, the localized level of MSAT emissions for the Build Alternatives could be higher relative to the No Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSAT levels will be lower in other locations when traffic shifts away from them. However, on a regional basis, USEPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

Unavailable Information for Project Specific MSAT Impact Analysis

The overall lack of available technical tools to enable prediction of the project-specific health impacts of the emission changes associated with the alternatives in this EIS limits the assessment of the potential for MSAT emission impacts due to this project to the basic analysis presented above. Due to these limitations, the following discussion is included in accordance with CEQ regulations [40 CFR 1502.22(b)] regarding incomplete or unavailable information:

Evaluating the environmental and health impacts from MSATs on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling in order to estimate ambient concentrations resulting from the estimated emissions, exposure modeling in order to estimate human exposure to the estimated concentration,, and then final determination of health impacts based on estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of this project.

- Emissions: The USEPA tools to estimate MSAT emissions from motor vehicles are not sensitive to key variables determining emissions of MSATs in the context of highway projects. While MOBILE 6.2 is

used to predict emissions at a regional level, it has limited applicability at the project level. Mobile 6.2 is a trip-based model – emission factors are projected based on a typical trip of 7.5 miles, and on average speeds for this typical trip. This means that MOBILE 6.2 does not have the ability to predict emission factors for a specific vehicle operating condition at a specific location at a specific time. Because of this limitation, Mobile 6.2 can only approximate the operating speeds and levels of congestion likely to be present on the largest =-scale projects, and cannot adequately capture emissions effects of shorter length, smaller scale projects. For PM, the model results are not sensitive to average trip speed, although the other MSAT emission rates do change with changes in trip speed. Also, emission rates used in MOBILE 6.2 for both PM and MSATs are based on a limited number of tests of mostly older-technology vehicles. Lastly, in its discussions of PM under the conformity rule, the USEPA has identified problems with MOBILE 6.2 as an obstacle to quantitative analysis.

These deficiencies compromise the capability of MOBILE 6.2 to estimate MSAT emissions. MOBILE 6.2 is an adequate tool for projecting emissions trends, and performing relative analyses between alternatives for very large projects (AADT is projected to range from 140,000 to 150,000 or greater in the design year), but it is not sensitive enough to capture the effects of travel changes tied to smaller projects or to predict emissions near specific roadside locations. The USEPA's Office of Transportation and Air Quality (OTAQ) is developing the Motor Vehicle Emission Simulator (MOVES) software model to estimate emissions for on-road and nonroad mobile sources. Although not released yet, when fully implemented, MOVES will provide a far better solution for developing projected emissions inventories applicable to MSAT analyses.

- **Dispersion:** The tools to predict how MSATs disperse are also limited. The USEPA's current regulatory models, CALINE 3 and CAL3QHC, were developed and validated more than a decade ago for the purpose of predicting episodic concentrations of CO to determine compliance with the NAAQS. The performance of dispersion models is more accurate for predicting maximum concentrations that can occur at some time at some location within a geographic area. This limitation makes it difficult to predict accurate exposure patterns at specific times at specific highway project locations across an urban area to assess potential health risk. The National Cooperative Highway Research Program (NCHRP) is conducting research on best practices in applying models and other technical methods in the analysis of MSATs. This work will also focus on identifying appropriate methods of documenting and communicating MSAT impacts in the NEPA process and to the general public. Along with these general limitations of dispersion models, FHWA is also faced with a lack of monitoring data in most areas for use in establishing project–specific MSAT background concentrations.

- **Exposure Levels and Health Effects:** Finally, even if emission levels and concentrations of MSATS could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about project-specific health impacts. Exposure assessments are difficult because it is difficult to accurately calculate annual concentrations of MSATs near roadways, and to determine the portion of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emission rates) over a 70-year period. There are also considerable uncertainties associated with the existing estimates of toxicity of the various MSATs, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any calculated difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with calculating impacts. Consequently, the results of such assessments would not be useful to decision-makers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of MSATs

Research into the health impacts of MSATs is ongoing. For different emission types, there are a variety of studies that show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses. Exposure to toxics has been a focus of a number of USEPA efforts. Most notably, the agency conducted the National Air Toxics Assessment (NATA) in 1996 to evaluate modeled estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the NATA database best illustrate the levels of various toxics when aggregated to a national or State level.

The USEPA is in the process of assessing the risks of various kinds of exposures to these pollutants. The USEPA Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various substances found in the environment. The IRIS database is located at http://www.epa.gov/iris. The following toxicity information for the six prioritized MSATs was taken from the IRIS database *Weight of Evidence Characterization* summaries. This information is taken verbatim from the USEPA's IRIS database and represents the Agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures.

- **Benzene** is characterized as a known human carcinogen.
- The potential carcinogenicity of **acrolein** cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- **Formaldehyde** is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.
- **1,3-butadiene** is characterized as carcinogenic to humans by inhalation.
- **Acetaldehyde** is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.
- **Diesel exhaust** is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel PM and diesel exhaust organic gases.
- **Diesel exhaust** also represents chronic respiratory effects, possibly the primary noncancer hazard from MSATs. Prolonged exposures may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

There have been other studies that address MSAT health impacts in proximity to roadways. The Health Effects Institute, a non-profit organization funded by the USEPA, FHWA, and industry, has undertaken a major series of studies to research near-roadway MSAT hot spots, the health implications of the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years.

Some recent studies have reported that proximity to roadways is related to adverse health outcomes – particularly respiratory problems. These studies include: the South Coast Air Quality Management District's *Multiple Air Tozic Exposure Study – II* (2000); the Sierra Club's *Highway Health Hazards* (2004) that summarized 24 studies on the relationship between health and air quality; and, the Environmental Law Institutes' *NEPAs Uncertainty in the Federal Legal Scheme Controlling Air Pollution from Motor Vehicles – 35 Environmental Law Review (ELR) 10273* (2005) including health studies cited therein. Much of this research is not specific to MSATs, instead surveying the full spectrum of both criteria and other pollutants. The FHWA cannot evaluate the validity of these studies, but more importantly, they do not provide information that would be useful to alleviate the uncertainties listed above and enable the FHWA to perform a more comprehensive evaluation of the health impacts specific to this project.

Relevance of Unavailable or Incomplete Information to Evaluating Reasonably Foreseeable Significant Adverse Impacts on the Environment, and Evaluation of Impacts Based upon Theoretical Approaches or Research Methods Generally Accepted in the Scientific Community.

Because of the uncertainties outlined above, a quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. While available tools do allow us to reasonably predict relative emissions changes between alternatives for larger projects, the amount of MSAT emissions from each of the project alternatives and MSAT concentrations or exposures created by each of the project alternatives cannot be predicted with enough accuracy to be useful in estimating health impacts. (As noted above the current emissions model is not capable of serving as a meaningful emissions analysis tool for smaller projects.) Therefore, the relevance of the unavailable or incomplete information is that it is not possible to make a determination of whether any of the alternatives would have "significant adverse impacts on the human environment".

4.3.3 Noise

A *Noise Study Report*[31] (NSR) has been prepared to determine the effect of the proposed project on traffic noise levels in the project area, in accordance with Title 23 CFR Part 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise*[32] (July 13, 2010) as required by the Noise Control Act of 1972 and the FDOT *PD&E Manual,* Part 2, Chapter 17[33] (May 24, 2011).

Although much of the project passes through undeveloped lands, there are noise sensitive areas in several locations within the Gulf Coast Parkway study area (shown in **Figure 1-1**). These areas have been identified for the purposes of the noise analysis as: Mexico Beach, Overstreet, Star Avenue at Tram Road, Nehi/Cherokee Heights, Tyndall Parkway, Lee Road, and US 231 Vicinity of North Camp Flowers Road. Thirty three receptors within these seven noise sensitive areas are located along the project's five alternatives and therefore potentially subject to noise impacts. The following discussion explains the analysis of the traffic noise at these receptors.

4.3.3.1 Methodology

Future traffic noise is predicted using the FHWA Traffic Noise Model[34] (TNM) Version 2.5. Before the model is used it must be validated that it is accurately predicting traffic noise. Validation is achieved by taking field measurements of existing noise levels at representative locations and comparing the measurements to those predicted by the model. If the model accurately predicts the noise levels obtained in the field it can be used to predict future traffic noise and, if predicted noise levels are determined to cause noise impacts, used to evaluate the feasibility of traffic noise barriers to abate traffic noise at those locations where impacts are predicted to occur.

A noise impact occurs when traffic noise levels approach or exceed the *Noise Abatement Criteria*[35] (NAC) for the land use category (**Table 4-29**) represented by the receptor being studied; or the predicted noise level represents a substantial increase in noise levels over existing noise levels. Approach is defined as one decibels (A-weighting) (dBA) below the criterion. A substantial increase in noise is an increase of 15 dBA or more. Therefore, any receptor that has predicted noise levels that meet either of these criteria is considered impacted and must have the feasibility and reasonability of abatement measures evaluated.

Table 4-29: FHWA Noise Abatement Criteria

Activity Category	Leq(h)	Description of Land Use Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Residential
C	67 (Exterior)	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	--	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	Undeveloped lands that are not permitted.

Source: 23 CFR Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise, FHWA, 2011.

4.3.3.2 Receptor Identification

A noise receptor can be discrete or a representative location for the land use activity categories listed in the table of NAC (**Table 4-29**). Receptor points representing the noise sensitive areas for this project were located in accordance with the guidelines in Chapter 17 of the FDOT's *PD&E Manual* as follows:

- Residential receptor sites were placed at the edges of buildings closest to the major traffic noise source.
- Where more than one noise sensitive site was clustered together, a single receptor site was analyzed as representative of the group.
- Ground floor receptor sites were assumed to be 5 feet above the ground elevation.

In addition to existing noise sensitive sites, a traffic noise evaluation must also consider sites that have been permitted. Consistent with the FDOT PD&E Manual, sites that have been granted a building permit prior to the date of public knowledge (i.e., date that the environmental document has been approved by the FHWA) should be evaluated as existing noise sensitive sites. Though an initial analysis has been completed, a complete land use review will be performed during the design phase to identify noise sensitive sites that may have received a building permit subsequent to this noise study but prior to the date of public knowledge. Known permitted noise sensitive sites have been evaluated for traffic noise and abatement considerations with the NSR.

4.3.3.3 Noise Model Validation

The noise monitoring performed on September 17-18, 2012 was conducted for two purposes. The first was to obtain measured noise levels to use in validating that TNM Version 2.5 was accurately predicting noise levels. The second purpose was to establish background noise levels so that any substantial increases in noise levels could be documented. The noise monitoring followed the procedures described in *Measurement of Highway-Related Noise*[36] (FHWA, 1996).

The predicted and ambient noise levels for each event are provided in **Table 4-30**. The decibel variance between predicted and measured noise levels at each monitoring site was equal to or less than three dB(A). Therefore, the noise model verification was within the accepted level of accuracy required in FDOT's *PD&E Manual*. At the rest of the monitoring events the ambient noise levels were taken to establish background noise levels so that any substantial increases can be documented.

Table 4-30: Noise Monitoring and Model Verification

Location	Trial Number	Time	Date	Field Measured Level [dB(A)]	Computer Predicted Level [dB(A)]	Variance [dB(A)]
Monitoring Site # 1 50 ft. West of the edge of pavement on CR 386 south of North Long Drive	1	4:35PM	9/17/12	57.8	56.3	1.5
	2	4:46 PM	9/17/12	58.2	56.3	1.9
Monitoring Site #2 50 ft. West of the edge of pavement on CR 386 north of North Long Drive	1	5:14 PM	9/17/12	51.3	50.2	1.1
	2	5:35 PM	9/17/12	48.2	50.2	2.0
Monitoring Site #3 30 ft. West of the edge of road surface on Cherokee Heights Road	1	11: 04 AM	9/18/12	49.9	N/A	N/A
	2	11: 14 AM	9/18/12	50.2	N/A	N/A
	3	11: 24 AM	9/18/12	49.9	N/A	N/A
	4	11: 34 AM	9/18/12	50.5	N/A	N/A
	5	11: 44 AM	9/18/12	50.9	N/A	N/A
	6	11: 55 AM	9/18/12	50.2	N/A	N/A
Monitoring Site #4 50 ft. East of the edge of pavement on US 231 near Nehi Road near Tram Road	1	12:15PM	9/18/12	59.2	57.1	2.1
	2	12:38 PM	9/18/12	60.1	57.2	2.9
Monitoring Site #5 30 ft. East of the edge of pavement on Tram Road	1	2:30 PM	9/18/12	48.2	N/A	N/A
	2	2:41 PM	9/18/12	49.2	N/A	N/A
	3	2:51 PM	9/18/12	48.5	N/A	N/A
	4	3:02 PM	9/18/12	48.1	N/A	N/A
	5	3:12 PM	9/18/12	47.9	N/A	N/A
	6	3:25 PM	9/18/12	48.0	N/A	N/A
Monitoring Site #6 30 ft. South of the edge of pavement on Bay Line Drive- Lee Road Area	1	9:42 AM	9/18/12	46.0	N/A	N/A
	2	9:55 AM	9/18/12	45.6	N/A	N/A
	3	10:05 AM	9/18/12	46.1	N/A	N/A
	4	10:15 AM	9/18/12	46.3	N/A	N/A
	5	10:25 AM	9/18/12	45.8	N/A	N/A
	6	10:35 AM	9/18/12	46.1	N/A	N/A
Monitoring Site #7 US 231 near Camp Flowers Road Area	1	9:10 AM	9/18/12	61.2	59.4	1.8

4.3.3.4 Noise Prediction

Traffic noise is heavily dependent on traffic speed, with the amount of noise generated by traffic increasing as the vehicle speed increases. Traffic data for year 2011 and the design year (2035) was reviewed to determine maximum traffic volumes that would allow traffic to flow at speeds consistent with established speed limits. To simulate "worst-case" conditions, LOS C or demand traffic volume, whichever is less, was modeled. The traffic data used can be found in the NSR prepared for this project.

Using TNM Version 2.5, noise levels were predicted for the No Build and all Build alternatives for the existing (2011) and the future (2035) traffic conditions at 33 receptor locations representing the seven noise sensitive areas: 10 receptors located in Mexico Beach, 11 receptors located in the Overstreet community, one receptor in close proximity to Star Avenue at Tram Road, seven receptors in the Nehi/Cherokee Heights area, one receptor in the Tyndall Parkway area, one receptor in the Lee Road area, and two receptors along US 231 in the vicinity of North Camp Flowers Road. The predicted noise levels are presented in **Table 4-31**.

Table 4-31: Predicted Noise Levels at Receptors Representing Sensitive Sites near Build Alternatives

Receptor ID	NAC Activity Category*	Alternative Involved	2011 Existing (dB(A))	2035 No-Build (dB(A))	2035 Build (dB(A))	Difference between Existing and Build (dB(A))	Is the Site Impacted?
Mexico Beach							
1	B	8,14,15,17,19	52.4	56.2	62.7	10.3	No
2	B	8,14,15,17,19	53.6	57.3	63.2	9.6	No
3	B	8,14,15,17,19	59.5	63.3	62.6	3.1	No
4	B	8,14,15,17,19	58.1	61.9	61.8	3.7	No
5	B	8,14,15,17,19	57.0	60.8	60.9	3.9	No
6	B	8,14,15,17,19	58.0	61.8	61.1	3.1	No
7	B	8,14,15,17,19	60.6	64.4	62.3	1.7	No
8	B	8,14,15,17,19	60.0	63.8	68.1	8.1	Yes
9	B	8,14,15,17,19	60.0	63.8	62.9	2.9	No
10	B	8,14,15,17,19	62.2	66.0	64.1	1.9	No
Overstreet Area							
11	B	8,14,15	51.3	55.0	61.9	10.6	No
12	B	8,14,15	53.6	57.4	57.7	4.1	No
13	B	8,14,15	51.6	55.4	55.7	4.1	No
14	B	8,14,15	56.6	60.4	60.4	3.8	No
15	B	8,14,15	53.1	56.8	57.3	4.2	No
16	B	8,14,15	54.4	58.2	58.7	4.3	No
17	B	8,14,15	54.3	58.1	58.5	4.2	No
18	B	8,14,15	51.4	55.2	55.4	4.0	No
19	B	8,14,15	51.8	55.6	55.8	4.0	No
20	B	8,14,15	47.8	51.6	56	8.2	No
21	B	8,14,15	46.8	50.5	54.3	7.5	No
Star Avenue at Tram Road							
22	B	8,17	42.1	45.1	48.8	6.7	No
Nehi/Cherokee Heights							
23	B	8,17	42.2	43.4	45.5	3.3	No
24	B	8,17	42.2	43.3	46.5	4.3	No
25	B	8,17	58.8	61.0	62.0	3.2	No
26	B	8,17	55.0	57.2	57.6	2.6	No
27	B	8,17	59.4	61.4	61.5	2.1	No
28	B	8,17	59.2	61.1	61.3	2.1	No
29	B	8,17	64.9	66.9	66.9	2.0	Yes
Tyndall Parkway							
30	C*	8,14,15,17,19	48.3	48.3	49.6	2.7	No
Lee Road							
31	C*	14,19	42.7	42.7	45.2	2.5	No
US 231 Vicinity of North Camp Flowers Road							
32	B	15	58.6	60.8	63.1	4.5	No
33	B	15	61.4	63.6	65.6	4.2	No

*Both Activity Categories B and C have a approach noise abatement levels criterion of 66 dB (A)

4.3.3.5 Noise Impacts

The predicted noise levels at the aforementioned receptors were evaluated against the NAC for noise impacts. Under the No Build Alternative, one receptor (29) experienced noise levels in excess of the NAC due to its proximity to US 231. Under the Build Alternatives, the NAC was exceeded at two receptors (8 and 29). 8 would be impacted by all Build Alternatives. The noise levels at 29 (which meet the 66 dB(A) threshold for approaching the Category B NAC) are the same under Alternatives 8 and 17 as under the No Build Alternative since the source for noise impacts is traffic on US 231 rather than that on the Gulf Coast Parkway. None of the receptors experienced noise impacts as a result of substantial increases in noise levels (increases in excess of 15 dB(A). The predicted noise levels and impacted receptors by alternative are summarized below.

No Build Alternative, predicted noise levels would range from 43.3 dB(A) to 66.9 dB(A) in the Design Year (2035). There is one receptor (29) that would exceed the NAC.

For Alternative 8, predicted traffic noise levels would range from 45.5 dB(A) to 68.1 dB(A) in the Design Year (2035). There are two total receptors that approach or exceed the applicable levels of the NAC. These impacted receptors are 8 and 29.

For Alternative 14, predicted traffic noise levels would range from 45.2 dB(A) to 68.1 dB(A) in the Design Year (2035). There is one total receptor that approaches or exceeds the applicable levels of the NAC. The impacted receptor is identified as 8.

For Alternative 15, predicted traffic noise levels would range from 49.6 dB(A) to 68.1 dB(A) in the Design Year (2035). There is one total receptor that approaches or exceeds the applicable levels of the NAC. The impacted receptor is identified as 8.

For Alternative 17, predicted traffic noise levels would range from 45.5 dB(A) to 68.1 dB(A) in the Design Year (2035). There are two total receptors that approach or exceed the applicable levels of the NAC. These impacted receptors are 8 and 29.

For Alternative 19, predicted traffic noise levels would range from 45.2 dB(A) to 68.1 dB(A) in the Design Year (2035). There is one total receptor that approaches or exceeds the applicable levels of the NAC. The impacted receptor is identified as 8.

The location of the noise sensitive receptors can be seen on **Figures 4-22A to 4-22G**.

Figure 4-22A: Locations of Noise Sensitive Receptors in the Mexico Beach Noise Sensitive Area

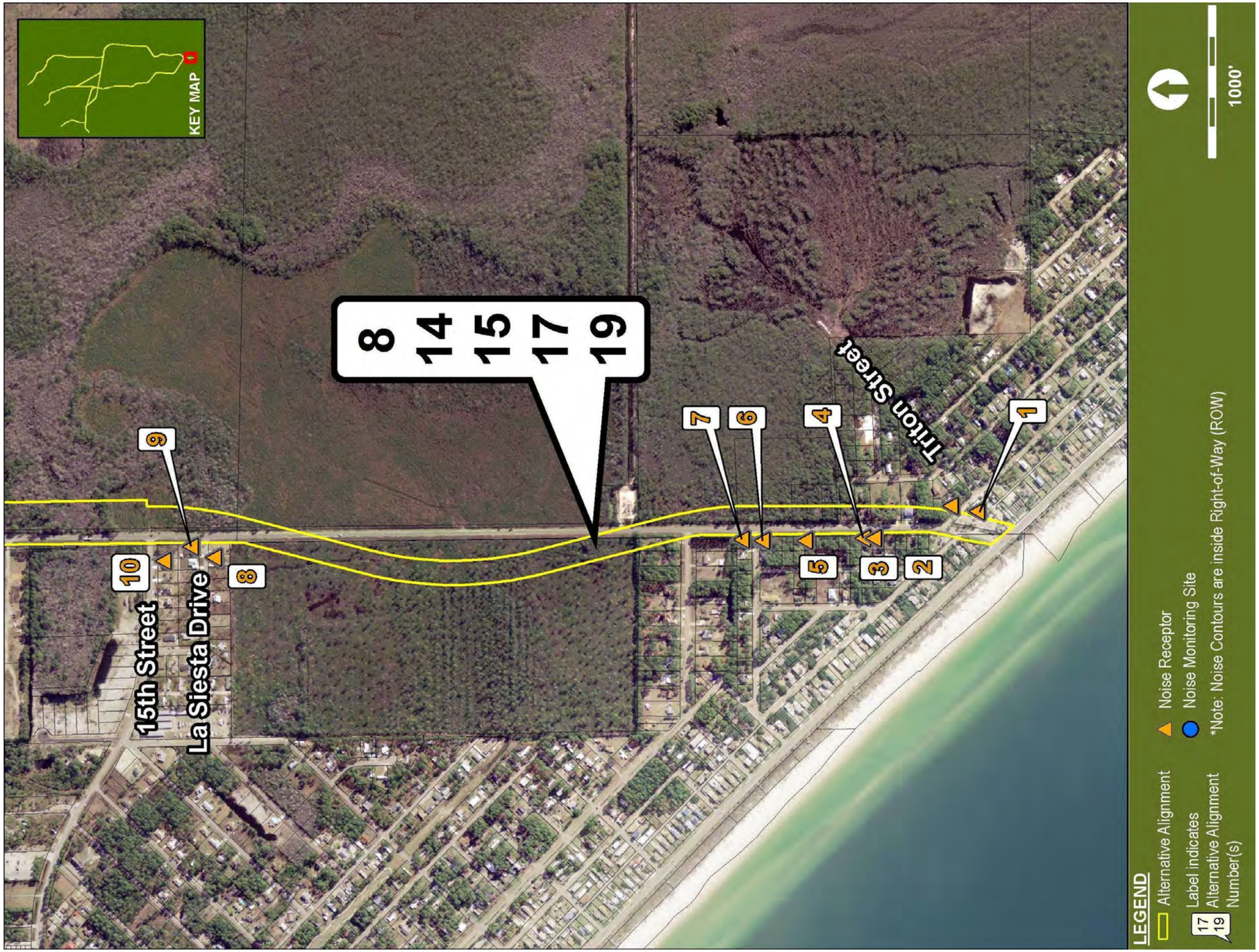


Figure 4-22B: Locations of Noise Sensitive Receptors in the Overstreet Noise Sensitive Area

Figure 4-22C: Locations of Noise Sensitive Receptors in the Star Avenue at Tram Road Noise Sensitive Area

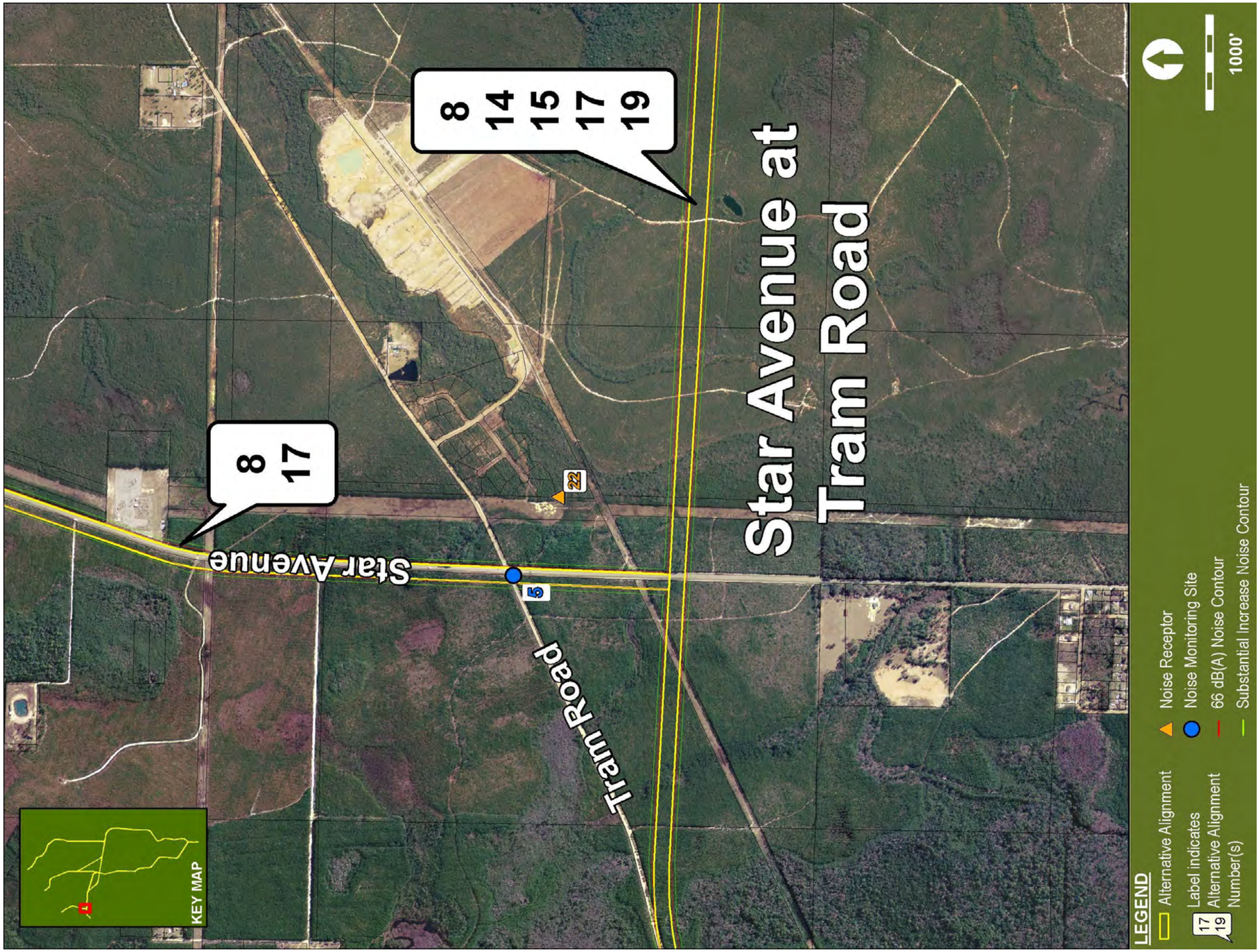


Figure 4-22D: Locations of Noise Sensitive Receptors in the Nehi/Cherokee Heights Noise Sensitive Area

Figure 4-22E: Locations of Noise Sensitive Receptors in Tyndall Parkway Noise Sensitive Area

Figure 4-22F: Locations of Noise Sensitive Receptors in the Lee Road Noise Sensitive Area

Figure 4-22G: Locations of Noise Sensitive Receptors in the US 231 Vicinity of North Camp Flowers Road Noise Sensitive Area

4.3.3.6 Noise Abatement Considerations

The FHWA requires that noise abatement measures be considered if the noise level at a sensitive receptor approaches or exceeds the NAC or if a noise sensitive receptor is predicted to experience a substantial increase in traffic noise attributable to the project. Therefore, abatement measures were evaluated for receptors R8 and R29. Abatement measures considered include traffic system management, alignment modifications, property acquisition, land use controls, and noise barriers.

Traffic System Management

Traffic system management techniques that limit motor vehicle speeds and reduce traffic volumes can be used to abate traffic noise. However, these measures conflict with the purpose of providing a facility that can accommodate the forecasted traffic volumes and meets the other purpose and need criteria for the project.

Reducing traffic volumes or prohibiting truck traffic is not consistent with the objective of providing a four-lane highway. Therefore, traffic system management techniques were not considered feasible abatement measures.

Alignment Modifications

Alignment modification involves orientating and/or siting the roadway at sufficient distances from the noise sensitive areas to minimize traffic noise. Alignment modifications will be used to minimize noise levels at the impacted receivers where feasible. During the design phase, the proposed alignment in the vicinity of R8 will be shifted further east to reduce the noise levels at this location. However, alignment shifts will not lessen noise levels at R29 since the primary source for the noise impacts is US 231 and not the proposed project.

Property Acquisition

Property acquisition of vacant land to serve as a noise buffer is not feasible due to the proximity of the noise sensitive receptors to the noise source. Local planning officials can use this information as a guide to minimize development of noise sensitive land uses in proximity to the proposed roadway.

Lane Use Controls

Land use controls can be used to minimize traffic noise in future developments or areas where development occurs. As a part of this process, the planning officials can take into account the presence of the Gulf Coast Parkway. The distance to the 66 dB(A),71 dB(A), and Substantial Increase (where applicable) noise contours for the Design Year (2035) Build condition is provided in NSR**.** Local planning officials can use the noise contour information to control development of noise sensitive land uses on currently undeveloped lands.

Noise Barriers

Those receptors for which the predicted noise levels approached or exceeded the FHWA NAC criteria, or experience a substantial increase from existing levels were considered for feasible and reasonable noise abatement, including noise barriers. Feasibility deals primarily with engineering considerations such as meeting minimum noise reduction requirements or whether there would be a negative effect on property access. Reasonableness is a cost benefit analysis based on the amount of noise reduction achieved for the cost expended.

Noise barriers reduce noise levels by blocking the sound path between a roadway and a noise sensitive site. To effectively reduce traffic noise, a noise barrier must be relatively long, continuous (with no intermittent openings) and of sufficient height.

For a noise barrier to be considered feasible and reasonable, the following minimum conditions should be met:

- To be considered feasible, a noise barrier must provide at least a five dB(A) reduction at two or more impacted receptors with a seven dB(A) reduction at one or more receptors. Constructability of a barrier using standard construction methods and techniques should also be considered.

- Reasonableness of a noise barrier consists of the cost effectiveness and whether it attains the FDOT's reduction design goal of 7 dB(A) for one or more of the benefited receptors. Cost reasonableness is expressed as $42,000 per benefited receptor. The cost of the noise barrier should not exceed $42,000 per benefited noise sensitive site. This is the reasonable cost limit established by the FDOT. A benefited noise receptor is defined as a receptor that would experience at least a five dB(A) reduction as a result of providing a noise barrier. The current unit cost used to evaluate economic reasonableness is $30 per square foot, which covers barrier materials and labor.

After determining the amount of noise reduction and cost, other factors such as community desires, adjacent land uses, land use stability, antiquity, predicted noise level increases, safety considerations, drainage issues, utility conflicts, maintenance requirements, and construction issues may also be considered when evaluating the feasibility and reasonableness of providing noise barriers.

Noise barrier construction was not feasible at receptors 8 and 29 as they do not meet the feasibility requirements. The goal of achieving a 5 decibel dB (A) reduction for two impacted receptors in order for a noise barrier to be considered feasible was not met as the impacted receptors were isolated receptors.

4.3.3.7 Noise Abatement Conclusions

The predicted noise levels and impacted receptors by alternative are summarized below.

No Build Alternative, predicted noise levels would range from 43.3 dB(A) to 66.9 dB(A) in the Design Year (2035). There is one receptor (29) that would exceed the NAC.

For Alternative 8, predicted traffic noise levels would range from 45.5 dB(A) to 68.1 dB(A) in the Design Year (2035). There are two total receptors that approach or exceed the applicable levels of the NAC. These impacted receptors are 8 and 29.

For Alternative 14, predicted traffic noise levels would range from 45.2 dB(A) to 68.1 dB(A) in the Design Year (2035). There is one total receptor that approaches or exceeds the applicable levels of the NAC. The impacted receptor is identified as 8.

For Alternative 15, predicted traffic noise levels would range from 49.6 dB(A) to 68.1 dB(A) in the Design Year (2035). There is one total receptor that approaches or exceeds the applicable levels of the NAC. The impacted receptor is identified as 8.

For Alternative 17, predicted traffic noise levels would range from 45.5 dB(A) to 68.1 dB(A) in the Design Year (2035). There are two total receptors that approach or exceed the applicable levels of the NAC. These impacted receptors are 8 and 29.

For Alternative 19, predicted traffic noise levels would range from 45.2 dB(A) to 68.1 dB(A) in the Design Year (2035). There is one total receptor that approaches or exceeds the applicable levels of the NAC. The impacted receptor is identified as 8.

Noise abatement measures were considered for the two receptors predicted to experience traffic noise levels that approach or exceed the NAC. An evaluation of traffic system management techniques, alignment modifications, and property acquisition were evaluated as possible abatement measures. A noise barrier does not appear to be a reasonable solution available to abate noise at the two impacted noise sensitive sites (Receptors 8 and 29). Noise barrier feasibility could not be achieved at both of the receptors as neither met the achievement of at least a five decibel reduction at two or more impacted receptors. Based on the noise analyses performed to date, an alignment modification will be required to mitigate noise levels at 8. However, there appears to be no apparent solution available to mitigate the noise impacts at 29.

A land use review will also be implemented during the design phase to identify noise sensitive receivers that may have received a building permit after October 10, 2012 but prior to the date of public knowledge (i.e., date that the environmental document is approved by FHWA). If the review identifies noise sensitive receivers that have been permitted prior to the date of public knowledge, then those noise sensitive receivers will be evaluated for traffic noise impacts and abatement considerations.

Noise and vibration effects may result from heavy equipment movement and construction activities, such as bridge pile driving and vibratory compaction of embankments. Construction noise and vibration sensitive sites adjacent to the project include: schools, churches, eye centers, medical centers, and residences. For these sensitive sites the application of the FDOT *Standard Specifications for Road and Bridge Construction* will minimize or eliminate most potential construction noise and vibration impacts. However should unanticipated noise or vibration issues arise during the construction process, the Project Engineer, in concert with the District Noise Specialist and the Contractor, will investigate additional methods of controlling these impacts.

Noise and vibration effects on fish from pile driving may be managed with one of the following measures,

1) Use of wood or concrete piles instead of hollow steel piles.
2) If using hollow steel piles, restrict their installation to a time of year when larval and juvenile stages of fish species with designated Essential Fish Habitat (EFH) are not present; drive piles during low tide periods when located in intertidal and shallow subtidal areas; use a vibratory hammer as much as possible; monitor peak Sound Pressure Level (SPLs) during pile driving to ensure that they do not exceed the 190 dB re 1Pa (Pascal) threshold for injury to fish; employ measures to attenuate sound should SPLs exceed 180 dB re 1 Pa (i.e. air bubble curtain system or air-filled coffer dam, use of a smaller hammer, and use of a hydraulic hammer if impact driving cannot be avoided); and drive piles when the current is reduced in areas of strong current.
3) Use of the construction technique called “ramping up” which requires the contractor to use soft-start procedures where the hammer is not used at full strength at the start of a pile driving session.

The need for these measures will be further evaluated during the project’s design and special provisions may be added to the project’s construction specifications, as appropriate.

4.3.4 Wetlands

After ETAT review of the project in the EST, the FDEP, the National Marine Fisheries Service (NMFS), the Northwest Florida Water Management District (NWFWMD), and the United States Army Corps of Engineers (USACE) responded with the following comments concerning wetlands (comments and responses presented in Appendix I):

- *FDEP – Wetland resource/stormwater permit applicant is required to eliminate or reduce impacts through avoidance, fill reductions, typical section, compensatory treatment, and mitigation. Cumulative effects must be addressed. High-level bridging should be utilized for ICWW/Wetappo Creek. crossing. Panama City Crayfish (PCC) habitat is a concern.*

- *NMFS –Natural hydrology, freshwater inflow, and stormwater runoff are concerns. Impacts to EFH must be addressed.*
- *NWFWMD – Direct and cumulative impacts should be minimized.*
- *USACE – Due to the overall acreage of wetland impacts an EIS should be prepared. Jurisdictional determination, functional analysis, pond siting analysis, wetland avoidance / minimization, a mitigation plan, limited / restricted access, wetland crossing design, and Quality Enhancement Strategies are all recommended.*

The NEPA documentation for this project is an EIS, as determined by FHWA, and has been developed in accordance with 23 CFR 771 and the FDOT PD&E Manual. Input from the ETAT agencies were taken into consideration in making the class of action decision. An ICE analysis, which has been coordinated with ETAT agencies, is summarized in Section 4.3.20. The avoidance and minimization measures implemented during the development of alternatives are discussed in Section 2 of this report. A summary of the Location Hydraulics Report concerning hydrologic conditions is presented in Section 4.3.11. Additional comments are addressed in the section below

In compliance with Executive Order 11990, and using the assessment methodology, evaluation procedures, and document preparation guidance found in the FHWA's Technical advisory T6640.8A, Title 23, CFR, Part 777, and Part Two, Chapter 18 of the FDOT *PD&E Manual*[37] consideration has been given to the protection of wetland resources. A separate *Wetland Evaluation Report*[38] (WER) has been prepared for this project. The purpose of the WER is to document any potential impacts to jurisdictional wetlands and the efforts taken to avoid, minimize, and mitigate for these impacts. The WER includes a summary of the literature searches, field reviews, and mapping conducted for this project. In addition, it includes the assessment of the functional values of all existing wetland habitats within the study area and the coordination conducted with the USACE, the FDEP, the NWFWMD, the United States Fish and Wildlife Service (USFWS), the Florida Fish and Wildlife Conservation Commission (FFWCC), and the NMFS that has been conducted to date.

An initial desktop habitat evaluation was conducted based on photo interpretation of both historical (1953) and FDEP Land Boundary Information System (Labins) 2004 Digital Orthophoto Quarter Quads (DOQQ) Aerial Photography (2004 Red, Green and Blue (RGB) State Plane) of the study area. Proposed project corridors/alignments were overlaid on aerial photos with data from sources mentioned above. The approximate boundaries of wetland communities were mapped on true color aerial photographs.

Wetland classifications were based on both *National Wetlands Inventory*[39] (NWI) and the FDOT's *Florida Land Use, Cover and Forms Classification System*[40] (FLUCFCS) classification schemes. FLUCFCS codes were determined to at least Level III. Relatively precise and accurate estimates of wetland acres and associated quality were derived by modifying FLUCFCS codes based on interpreting recent and historic aerial photographs, and soils data. These analyses were further refined through field verifications and associated habitat maps were updated as necessary. Field verifications relative to wetland boundaries were based upon delineation methods described in the *Interim Regional Supplemental to the Corps of Engineers Wetland Delineations Manual: Atlantic and Gulf Coastal Plain Region*[41], dated October 2008, and Chapter 62-340, FAC, *Delineation of the Landward Extent of Wetlands and Surface Waters*[42].

Field reconnaissance took place at various times from April through October 2007 and April through October 2009. Since some of the proposed alignments were located on private land, wetland reconnaissance within the proposed alignments was limited to areas of general public access including along power line easements, gas transmission line easements, existing roads, within public land, and on private land where access was granted. These field reconnaissance events were conducted concurrently with seasonal listed species surveys [see the Endangered Species Biological Assessment Report (ESBAR)]. Wetland quality associated with alternatives was also assessed using the Uniform Mitigation Assessment Method[43] (UMAM) defined in Chapter 62-345 FAC (see Section 6 of the WER for UMAM methods and results).

Whenever wetlands observed in the field differed from boundaries depicted based on publically-available wetland data (FLUCFCS types), notes were made on field maps and Global Positioning System (GPS) points were logged as necessary. Photo-interpreted wetland lines were then revised based upon field verified data and interpreted FLUCFCS codes were modified where appropriate. All data were uploaded into ArcMap™ 9.2 GIS for processing and further analyses of potential wetlands involvement. As wetland data was received from the field, alternative alignments were adjusted where feasible (considering other parameters) to avoid and minimize potential wetland involvement. This was an ongoing and iterative process. .

Table 4-32 shows the Build Alternatives' involvement with wetlands and uplands. Wetland involvement across the Build Alternatives ranges from 35 percent (339.3 acres) for Alternative 8 to 55 percent (575.1 acres) for Alternative 19. Combined acreage (wetlands and uplands combined) ranged from approximately 734 acres (Alternative 8) to approximately 1,080 acres (Alternative 15). The No Build Alternative would not have any wetland impacts that can be forecasted.

Table 4-32: Total Wetland and Upland Acreage Impacted by Gulf Coast Parkway Build Alternatives

Land Type	Alternative				
	8 (Acres)	14 (Acres)	15 (Acres)	17 (Acres)	19 (Acres)
Wetlands	339.3	503.6	508.2	438.7	575.1
Uplands	394.9	478.3	571.6	288.8	366.6
Total Acreage	**734.2**	**981.9**	**1079.8**	**727.5**	**941.7**

Direct involvement with wetlands and surface waters (creeks, streams, ditches) will occur as a result of roadway construction activities with all Build Alternatives since a significant amount of each alternative involves new alignment (see *Wetland Evaluation Report* for additional wetland information). Indirect wetland effects are a by-product of direct effects or impacts. Indirect wetland effects are manifested in the reasonably foreseeable future or some distance away from the location of the direct impact. Indirect effects could include future development, changes in land use, and/or changes in population dynamics that as a result, have the potential to affect natural resources. In this region of Florida, regulatory agencies commonly request that indirect effects for wetlands be assessed within 300 feet of alignment boundaries. The relative percentage of wetlands found at the alternative level is consistent with that occurring when the 300-foot buffer is considered (**Table 4-33)** and range from approximately 2,083 to approximately 3,041 acres.

Table 4-33: Total Wetland and Upland Acreage Impacted by Gulf Coast Parkway Build Alternatives with 300-Foot Buffer

Land Type	Alternative				
	8 (Acres)	14 (Acres)	15 (Acres)	17 (Acres)	19 (Acres)
Wetlands	1,064.90	1,430.60	1,506.10	1,237.20	1,541.70
Uplands	1,237.90	1,380.10	1,535.00	845.50	926.30
Total Acres	**2,302.80**	**2,810.70**	**3,041.10**	**2,082.70**	**2,468.00**

4.3.4.1 Gulf Coast Parkway Alternatives' Involvement with Wetlands

Wetlands were classified according to the FDOT's, *FLUCFCS*[40]. Refer to **Table 3-28** in Section 3 for a description of the wetland types in the study area. Section 4.3.5 describes the wetlands associated with EFH in more detail.

Direct wetland involvement per FLUCFCS type for each alternative is presented in **Table 4-34** and shown in **Appendix E.** Wetland FLUCFCS types are grouped into low or high quality categories based on the degree of disturbance typically associated with each FLUCFCS type. For example, hydric pine plantations are generally considered low quality due to typical silviculture activities such as bedding, ditching and fire suppression, which lead to an overburden of shrubs and relatively low species richness in the understory and groundcover layers. Likewise, even though hydric powerline and pipeline corridors may sometimes exhibit enhanced species richness, they are usually considered "low quality" due to the potential for abrupt impacts to community structure stemming from maintenance activities such as herbicide treatments, clearing, mowing, and new construction. . Wetland involvement described in this section is based on methods described in the *WER*.

Alternative 8

The estimated total acreage (wetlands, uplands, water, and developed land) comprising Alternative 8 is approximately 960 acres. Wetlands account for approximately 339 acres or 35% of the total acreage; of which 210 acres (or 62% of total wetland acreage) are classified as low quality (**Table 4-34**). Potentially, 205 different wetland areas (polygons) could be involved with this alternative (average wetland involvement is 1.7 acres). Among all five alternatives, this alternative had the lowest amount of wetland involvement in terms of total acres.

Approximately 99% of the low quality wetlands within the alternative's alignment consist of hydric pine plantation. High quality wetlands within this alignment include the crossing of 13 named streams and creeks: Calloway Creek, a small tributary of Calloway Creek, Cushion Creek, Cooks Bayou/Olivers Creek, Sandy Creek, Little Sandy Creek, Horseshoe Creek, Lamb Branch, Cypress Creek, and Panther Swamp. Additionally, this Alternative Alignment crosses Wetappo Creek/ICWW just north of the Overstreet community.

Alternative 14

Alternative 14 is associated with a similar route to Alternative 8, but takes a northeastern route from SR 22 where it encounters different wetland habitats. The estimated total area (wetlands, uplands, water, and developed land) comprising Alternative 14 is approximately 1,207 acres. Wetlands account for approximately 503 acres, or 41% of the total acreage; of which 303 acres (or 60% of total wetland acreage) are classified as low quality (**Table 4-34**). Potentially, 282 different wetland areas (polygons) could be involved with this alternative (average wetland involvement is 1.8 acres). Approximately 279 acres (92%) of the low quality wetlands within this alternative's alignment consist of hydric pine plantation. The majority of the remaining low quality habitat (5%) is associated with hydric utility transmission corridors. Among all five alternatives, the amount of wetland involvement (total acres) for this alternative was intermediate.

Alternative 14 also involves the crossing of 17 named streams and creeks, the alternative with the highest number of crossings. These water bodies include: Callaway Creek, Cushion Creek, Beefwood Branch, Bayou George/Island Branch, Horseshoe Creek, Lamb Branch, Big Branch, Cooks Bayou/Olivers Creek, Sandy Creek, Little Sandy Creek, Bear Swamp, Cypress Creek, and Panther Swamp. Big Branch, Island Branch and Beefwood Branch are all tributaries to Bayou George, which is a tributary to Deer Point Lake – a designated Class I water body and major potable water source for Bay County. Additionally, this alternative would cross Wetappo Creek/ICWW just north of the Overstreet community.

Alternative 15

The estimated total acreage (wetlands, uplands, water, and developed land) comprising Alternative 15 is approximately 1,318 acres. Wetlands account for approximately 508 acres or 39 percent of the total acreage; of which 340 acres (or 66 percent of total wetland acreage) are classified as low quality (**Table 4-33**). Potentially, 254 different wetland areas (polygons) could be involved with this alternative (average wetland involvement is 2.1 acres). Approximately 336.9 acres (99 percent) of the low quality wetlands within the alternative consist of

hydric pine plantation. Among all five alternatives, the amount of wetland involvement (total acres) for this alternative was intermediate.

Alternative 15 involves the crossing of 17 named stream and creek crossings (same number as Alternative 14, the highest number of crossings). These systems include: Callaway Creek, Cushion Creek, Big Branch, Cooks Bayou/Olivers Creek, Gude Branch, Horseford Branch Sandy Creek, Bear Swamp, Little Sandy Creek, Horseshoe Creek, Lamb Branch, Cypress Creek, and Panther Swamp. Alternative 15 crosses Horseford Creek a tributary to the South Fork of Bear Creek along with several small unnamed tributaries to the South Fork of Bear Creek. Bear Creek is significant in that it is a tributary to Deer Point Lake, which is designated a Class I water body and is a major potable water source for Bay County. Additionally, this alternative crosses Wetappo Creek/ICWW just north of the Overstreet community. In this area, the ICWW is in the channel of Wetappo Creek.

Alternative 17

Alternative 17 is the shortest alternative with an estimated total area (wetlands, uplands, water, and developed land) comprising approximately 835 acres. Wetlands account for approximately 439 acres or 52% of the total acreage; of which 261 acres (or 59% of total wetland acreage) are classified as low quality (**Table 4-34**). Potentially, 189 different wetland areas (polygons) could be involved with this alternative (average wetland involvement is 2.3 acres). Approximately 238 acres (91%) of the low quality wetlands within the alternative's alignment consist of hydric pine plantation. The majority of the remaining low quality habitat (7%) is comprised of hydric cropland and pastureland (FLUCFCS 210W). Among all five alternative alignments, the amount of wetland involvement (total acres) for this alignment was intermediate.

Alternatives 17 and 19 both involve crossing the open water estuarine habitat of East Bay. Approximately 50.8 acres of open water embayment habitat would be crossed (FLUCFCS 541) by this alternative's alignment. Additional high quality wetlands within this alignment include five named stream and creek crossings that include: Calloway Creek and a small tributary of Calloway Creek, Cushion Creek, Cooks Bayou/Olivers Creek and two small tributaries of Cooks Bayou, Cypress Creek, Bear Swamp and Panther Swamp. Alternative 17 involves the fewest named stream and creek crossings when compared to all other alternatives.

Alternative 19

The estimated total area (wetlands, uplands, water, and developed land) comprising Alternative 19 is approximately 1,057 acres. Wetlands account for approximately 575 acres or 55% of the total acreage; of which 334 acres (or 58% of total wetland acreage) are classified as low quality (**Table 4-34**). Potentially, 229 different wetland areas (polygons) could be involved with this alternative (average wetland involvement is 2.5 acres). Approximately 306.3 acres (92%) of the low quality wetlands within the alignment consist of hydric pine plantation. The majority of the remaining low quality habitat (7%) is comprised of hydric cropland and pastureland (FLUCFCS 210W). Among all five alternatives, this alignment had the highest amount of wetland involvement in terms of total acres.

Both Alternatives 17 and 19 involve crossing the open water estuarine habitat of East Bay. Approximately 50.8 acres of open water embayment habitat would be crossed (FLUCFCS 541) with this Alternative. Additional high quality wetlands within this alignment include nine named stream and creek crossings that include: Beefwood Branch, Bayou George/Island Branch, Big Branch, Boggy Creek, Cooks Bayou/Olivers Creek, Cushion Creek, Cypress Creek, Bear Swamp, and Panther Swamp.

Table 4-34: Comparison of Potential Direct Wetland Involvement (per FLUCFCS Code and Wetland Quality) by Gulf Coast Parkway Build Alternatives

FLUCFCS Type	8			14			15			17			19		
	Area Acres (AC)	No. Areas	Avg. Size	Area (AC)	No. Areas	Avg. Size	Area (AC)	No. Areas	Avg. Size	Area (AC)	No. Areas	Avg. Size	Area (AC)	No. Areas	Avg. Size
530 Reservoirs	0.2	1	0.2	0.6	2	0.3	0.4	2	0.2				0.4	1	0.4
210W Hydric Cropland & Pastureland							1.4	1	1.4	19.8	13	1.5	19.8	13	1.5
441W Hydric Pine Plantation	208.6	89	2.3	279.4	113	2.5	336.5	108	3.1	238.2	86	2.8	306.4	95	3.2
443W Hydric Forest Regeneration Areas	0.3	1	0.3	0.3	1	0.3	0.3	1	0.3						
510D Ditch				1.7	3	0.6	1.0	3	0.3	1.7	9	0.2	3.7	13	0.3
814W Hydric Road										1.0	1	1.0	1.0	1	1.0
817W Hydric Oil, Water or Gas Transmission Line				16.1	12	1.3									
832W Hydric Powerline	0.4	1	0.4	5.3	4	1.3	0.4	1	0.4	0.4	1	0.4	2.7	4	0.7
Low Quality	209.5	92	2.3	303.4	135	2.2	340	116	2.9	261.1	110	2.4	334.0	127	2.6
510 Streams & Waterways	7.1	15	0.5	12.8	22	0.6	7.1	16	0.4	2.3	4	0.6	5.4	8	0.7
541 Embayments										50.8	1	50.8	50.8	1	50.8
614 Titi Swamp				6.3	6	1.1	11.9	6	2.0				3.6	3	1.2
620 Wetland Coniferous Forests	18.3	7	2.6	18.3	7	2.6	19.0	7	2.7	7.1	3	2.4	7.1	3	2.4
621 Cypress	3.2	4	0.8	3.6	5	0.7	3.7	5	0.7	1.2	2	0.6	1.2	2	0.6
626 Hydric Pine Savanna	13	2	6.5	13.0	2	6.5	13.0	2	6.5						
630 Wetland Forested Mixed	81.6	75	1.1	139.6	96	1.5	106.9	93	1.2	110.4	66	1.7	167.2	83	2.0
640 Vegetated Non-Forested Wetland	0.1	4	0	0.1	3	0	0.1	3	0	5.8	3	1.9	5.8	2	2.9
642 Saltwater Marsh	6.5	6	1.1	6.5	6	1.1	6.5	6	1.1						
High Quality	129.8	113	1.2	200.2	147	1.4	168.2	138	1.2	177.6	79	2.3	241.1	102	2.4
Wetland Total	**339.3**	**205**	**1.7**	**503.6**	**282**	**1.8**	**508.2**	**254**	**2.0**	**438.7**	**189**	**2.3**	**575.1**	**229**	**2.5**

4.3.4.2 Uniform Mitigation Assessment Method

A UMAM analysis was performed for each FLUCFCS wetland type within each alternative alignment. The UMAM is currently used by the State of Florida to assess wetland condition as established by the FAC, Chapter 62-345. UMAM was also accepted as the wetland assessment methodology of the Jacksonville District of the USACE via a Public Notice dated August 18, 2005. The primary purpose for UMAM is to determine the amount of compensatory mitigation required by the appropriate regulatory agency. This wetland assessment methodology has replaced the Wetland Rapid Assessment Procedure (WRAP) previously utilized.

The UMAM is a rating index that assists in evaluating the functions and values of a wetland system. It establishes a numerical score for a wetland based on various ecological or anthropogenic variables known to influence the functional value of wetlands. UMAM scores are based on the total of three categories, scored from zero (lowest) to 10 (highest), divided by the total maximum score for the variables (30). The UMAM score is expressed as a number between zero and one, with one being assigned to the highest valued/functioning wetlands. The three criteria scored are: Location and Landscape support, Water Environment, and Community Structure.

Due to the size of the area under review, the number of alternatives under consideration, and access issues concerning some private landowners, each wetland FLUCFCS polygon was not independently assessed for functional value. Instead, the UMAM was used to evaluate representative wetlands of each FLUCFCS type (per PD&E Manual) within the alternatives' alignments. UMAM scores were developed for these wetlands based on desktop and field assessments and observed conditions of similar wetlands within the region (**Table 4-35**).

Table 4-35: Generalized UMAM Scores per FLUCFCS Type across Build Alternatives

FLUCFCS	Location and Landscape	Water Environment	Community Structure	Total Score
210W	4	5	5	0.47
441W	6	6	5	0.56
443W	4	4	4	0.40
510	8	7	8	0.77
510D	4	4	6	0.47
524	6	6	7	0.63
530	5	4	4	0.43
541	9	8	8	0.83
614	6	5	5	0.53
620	7	7	8	0.73
621	7	7	7	0.70
625	6	6	7	0.63
626	6	6	7	0.63
630	6	6	7	0.63
640	7	7	7	0.70
641	7	7	8	0.73
642	8	8	8	0.80
643	7	7	7	0.70
814W	4	4	5	0.43
817W	6	7	7	0.67
832W	6	7	7	0.67

4.3.4.3 UMAM Results

UMAM scores were derived at the FLUCFCS level and not for individual assessment areas or wetland polygons within the alternatives. As such, the resultant UMAM scores approximate mitigation needed to offset wetland impacts. More accurate UMAM scores (specific to each wetland area/polygon) will be derived during the design/permitting phase of the project. UMAM scores for the various FLUCFCS types ranged from 0.40 (443W) to 0.83 (541). Scores were lower for artificial and altered wetlands such as, but not limited to hydric pine plantations, ditches, fire suppressed titi systems, and manmade ponds. Hydric powerline and natural gas transmission corridors generally had UMAM scores that were "intermediate". These scores were driven by relatively high community structure scores (species richness) resulting from routine maintenance practices that can mimic periodic fire. However, these systems are also subject to abrupt changes in community structure from expansion projects, road installation or pipeline/powerline infrastructure maintenance. The UMAM scores for each FLUCFCS type were multiplied by the acreage of that FLUCFCS type within a proposed alternative alignment to generate the functional wetland loss per alternative alignment (Table 4-35). Functional loss scores are used to determine the amount of mitigation required to offset the estimated functional loss of the impacted wetlands. Potential mitigation options are discussed in Section 4.3.4.5.

Potential functional loss based on UMAM scores for the five alternatives ranged between 203.1 (Alternative 8) to 348.7 (Alternative 19). The functional loss scores (**Table 4-36**) tended to correspond with the direct wetland involvement acreages identified in **Table 4-36**. For example, Alternative 19 had the highest wetland involvement (575.1 acres) and also the highest functional loss score (348.7). Likewise, Alternative 8 had the lowest amount of wetland involvement (339.1 acres) and the lowest functional loss score (203.1). Alternatives 14, 15, and 17 also showed a corresponding decrease in functional loss with decreasing amounts of wetland involvement. These results suggest that the ratio of high quality to low quality wetlands is relatively consistent across all the alternatives. However, this general assessment assumes that all impacts will result in direct or complete loss of wetlands where in the case of a potential bridge crossing across East Bay (Alternatives 17 and 19), the impacts may not result in direct or complete loss of wetlands. Wetland-specific and project specific UMAM assessments will be required during the permitting/design phase of this project.

In addition to direct impacts to wetlands, the project could have indirect effects. Examples of potential indirect effects associated with this project could include water quality degradation from stormwater runoff or roadway spills, changes in hydrology (alteration of hydroperiods due to more impervious surfaces), edge effect impacts from filling wetlands, habitat fragmentation and potential changes in wildlife utilization, increased constraints on implementing prescribed burning management plans, and creation of a conduit/corridor (roadway) for exotic/invasive species range expansion.

In this region of Florida, the regulatory agencies require an assessment of indirect effects within 300 feet of an alternative's boundaries. A conservative approach was taken in identifying the amount of indirect effects the project would have on wetlands by including the total wetland area within the 300-foot buffer area of each alternative (**Table 4-37**). Not surprisingly, the potential indirect wetland effects follow the same pattern that was found for potential direct effects. Alternative 8 had the least amount of indirect wetland involvement (1,067.1 acres) and Alternative 19 (1,543.8 acres) had the most.

As previously noted, UMAM functional loss scores tended to correspond with wetland involvement acreages, suggesting that the ratio of high quality to low quality wetlands is relatively consistent across all the alternatives. When functional loss scores were applied to indirect wetland involvement (**Table 4-38**), the same trend existed.

Potential induced growth and cumulative effects on wetlands are discussed in **Section 4.3.20** of this report.

Table 4-36: UMAM Functional Loss Values per Wetland FLUCFCS Type for Gulf Coast Parkway Build Alternatives

FLUCFCS	Generalized UMAM Score	Alternative 8		Alternative 14		Alternative 15		Alternative 17		Alternative 19	
		Impact (Acres)	Functional Loss	Impact (Acres)	Functional Loss	Impact (Acres)	Functional Loss	Impact (Acres)	Functional Loss	Impact (Acres)	Functional Loss
530	0.43			0.6	0.3	0.4	0.2			0.4	0.2
210W	0.47					1.4	0.7	19.8	9.3	19.8	9.3
441W	0.56	208.6	116.8	279.4	156.5	336.5	188.4	238.2	133.4	306.4	171.6
443W	0.40	0.3	0.1	0.3	0.1	0.3	0.1				
510D	0.47			1.7	0.8	1.0	0.5	1.7	0.8	3.7	1.7
814W	0.43							1.0	0.4	1.0	0.4
817W	0.67			16.1	10.8						
832W	0.67	0.4	0.3	5.3	3.6	0.4	0.3	0.4	0.3	2.7	1.8
510	0.77	7.1	5.5	12.8	9.9	7.1	5.5	2.3	1.8	5.4	4.2
541	0.83							50.8	42.2	50.8	42.2
614	0.53			6.3	3.3	11.9	6.3			3.6	1.9
620	0.73	18.3	13.4	18.3	13.4	19.0	13.9	7.1	5.2	7.1	5.2
621	0.70	3.2	2.2	3.6	2.5	3.7	2.6	1.2	0.8	1.2	0.8
626	0.63	13.0	8.2	13.0	8.2	13.0	8.2				
630	0.63	81.6	51.4	139.6	87.9	106.9	67.3	110.4	69.6	167.2	105.3
640	0.70	0.1	0.1	0.1	0.1	0.1	0.1	5.8	4.1	5.8	4.1
642	0.80	6.5	5.2	6.5	5.2	6.5	5.2				
	Direct Totals	**339.2**	**339.1**	**203.1**	**503.6**	**302.5**	**508.2**	**299.2**	**438.7**	**267.8**	**575.1**

Table 4-37: Potential Indirect Wetland Involvement by Alternative

Indirect Involvement by Alignment	8			14			15			17			19		
	Area (AC)	No. Areas	Avg. Size	Area (AC)	No. Areas	Avg. Size	Area (AC)	No. Areas	Avg. Size	Area (AC)	No. Areas	Avg. Size	Area (AC)	No. Areas	Avg. Size
210W							5.1	1	5.1	54.5	15	3.6	54.5	15	3.6
441W	630.1	141	4.5	827.6	155	5.3	978.9	173	5.7	664.5	124	5.4	792.6	128	6.2
443W	2.7	1	2.7	2.7	1	2.7	2.7	1	2.7						
510D	0.2	1	0.2	2.1	4	0.5	2.7	9	0.3	4.4	9	0.5	7.3	13	0.6
524	0.4	1	0.4	0.4	1	0.4	0.4	1	0.4	0.4	1	0.4	0.4	1	0.4
530	0.6	7	0.1	0.6	7	0.1	1.2	10	0.1	0.2	3	0.1	0.2	3	0.1
817W													0.5	1	0.5
832W	3.6	11	0.3	21.3	14	1.5	1.3	4	0.3	3.8	10	0.4	41.9	18	2.3
Low Quality	637.6	162	3.9	854.7	182	4.7	992.3	199	5.0	727.8	162	4.5	897.4	179	5
510	20.3	20	1.0	33.3	28	1.2	20.2	21	1.0	7.6	6	1.3	16.7	10	1.7
541										120.9	1	120.9	120.9	1	120.9
614				19.8	8	2.5	15.9	15	1.1	1.7	1		17.4	7	2.5
620	58.1	11	5.3	59.3	12	4.9	58.6	11	5.3	17.0	8	2.1	18.3	9	2.0
621	3.4	6	0.6	6.6	10	0.7	4.9	7	0.7	4.2	6	0.7	4.9	6	0.8
626	33.1	3	11.0	33.1	3	11.0	33.1	3	11.0						
630	293.3	145	2.0	405.5	161	2.5	362.8	160	2.3	342.1	125	2.8	451.0	138	3.3
640	3.5	7	0.5	2.7	5	0.5	2.7	5	0.5	15.2	4	3.8	14.4	2	7.2
641										0.1	1	0.1	0.1	1	0.1
642	15.6	6	2.6	15.6	6	2.6	15.6	6	2.6	0.6	3	0.2	0.6	3	0.2
High Quality	427.3	198	2.2	575.9	233	2.5	513.8	228	2.3	509.4	155	3.3	644.3	177	3.7
Wetland Total	**1,064.9**	**360**	**3.0**	**1,430.6**	**415**	**3.5**	**1,506.1**	**427**	**3.5**	**1,237.2**	**317**	**3.9**	**1,541.7**	**356**	**4.3**

Table 4-38: Indirect Involvement and Potential Functional Loss Per FLUCFCS Wetland Type for Build Alternatives

FLUCFCS	Generalized UMAM Score	Alignment 8		Alignment 14		Alignment 15		Alignment 17		Alignment 19	
		Impact (AC)	Functional Loss	Impact (AC)	Functional Loss	Impact (AC)	Functional Loss	Impact (AC)	Functional Loss	Impact (AC)	Functional Loss
210W	0.47					5.1	2.4	54.5	25.6	54.5	25.6
441W	0.56	630.1	352.9	827.6	463.5	978.9	548.2	664.5	372.1	792.6	443.9
443W	0.40	2.7	1.1	2.7	1.1	2.7	1.1				
510D	0.47	0.2	0.1	2.1	1.0	2.7	1.3	4.4	2.1	7.3	3.4
524	0.63	0.4	0.3	0.4	0.3	0.4	0.3	0.4	0.3	0.4	0.3
530	0.43	0.6	0.3	0.6	0.3	1.2	0.5	0.2	0.1	0.2	0.1
817W	0.67									0.5	0.3
832W	0.67	3.6	2.4	21.3	14.3	1.3	0.9	3.8	2.5	41.9	28.1
510	0.77	20.3	15.6	33.3	25.6	20.2	15.6	7.6	5.9	16.7	12.9
541	0.83							120.9	100.3	120.9	100.3
614	0.53			19.8	10.5	15.9	8.4	1.7	0.9	17.4	9.2
620	0.73	58.1	42.4	59.3	43.3	58.6	42.8	17.0	12.4	18.3	13.4
621	0.70	3.4	2.4	6.6	4.6	4.9	3.4	4.2	2.9	4.9	3.4
626	0.63	33.1	20.9	33.1	20.9	33.1	20.9				
630	0.63	293.3	184.8	405.5	255.5	362.8	228.6	342.1	215.5	451	284.1
640	0.70	3.5	2.5	2.7	1.9	2.7	1.9	15.2	10.6	14.4	10.1
641	0.73							0.1	0.1	0.1	0.1
642	0.80	15.6	12.5	15.6	12.5	15.6	12.5	0.6	0.5	0.6	0.5
	Totals	**1,064.9**	**637.9**	**1,430.6**	**855.0**	**1,506.1**	**888.5**	**1,237.2**	**751.9**	**1,541.7**	**935.6**

4.3.4.4 Avoidance and Minimization

Avoidance and minimization of potential wetland and surface water involvement was central to both corridor and alternative development. Direct involvement with wetlands and surface waters (creeks, streams, ditches) will occur as a result of roadway construction activities. Recognizing this, efforts have been made throughout the PD&E process via desktop analyses and subsequent field surveys to identify routes that may result in fewer wetland impacts – especially those potentially involving higher quality wetlands. During the project design phase, jurisdictional wetlands will be field-delineated resulting in a more detailed assessment of wetland involvement (quantity and quality) for the Preferred Alternative. These detailed field assessments may facilitate further reductions in potential wetland involvement through minor shifts of the Preferred Alternative, if practicable. Further temporary direct and indirect wetland impacts will be minimized through compliance with FDOT *Standard Specifications for Road and Bridge Construction*[44], and utilization of BMP at wetland, bay, and stream crossings (especially East Bay and Wetappo Creek) during construction.

4.3.4.5 Mitigation and Commitments

Mitigation will be required for direct and indirect wetland impacts. At this point in project development, FDOT is not prepared to state definitely how impacts to wetlands will be mitigated due to the varying types and locations of resources that could be impacted. It is unknown as to the degree, type, or location of mitigation that will be required until permitting requirements for the Preferred Alternative are evaluated. However, wetland impacts which result from the construction of this project will be mitigated pursuant to Section 373.4137, FS to satisfy all mitigation requirements of Part IV. Chapter 373, FS and 33 U.S.C. s. 1344. Compensatory mitigation for this project will be completed through the use of mitigation banks and any other mitigation options that satisfy state and federal requirements. As mitigation methods pursuant to Section 373.4137, FS have been approved by the permitting agencies as an accepted mitigation process, the following discussions are provided to illustrate that at a conceptual mitigation level all alternatives for the Gulf Coast Parkway project have an acceptable and available means for mitigating their wetland impacts.

A critical aspect of securing wetland mitigation concerns the amount, type, and timing of wetland impacts. Wetland involvement associated with the Gulf Coast Parkway project is contained within the St. Andrews-St. Joseph Bays watershed (hydrologic unit = 03140101; "subject watershed"). At this stage of the project, i.e., PD&E level, potential wetland involvement has been estimated based upon desktop analyses and field reconnaissance/assessments (UMAM functional loss scores ranged between 203 and 349). According to data housed and maintained by the USACE Regulatory In-lieu fee and Bank Information Tracking System (http://geo.usace.army.mil/ribits/index.html; accessed March 9, 2012) and the NWFWMD Wetland Programs websites (http://www.nwfwmdwetlands. com/index.php?Page=11; accessed March 9, 2012), it appears that four existing private mitigation banks (Breakfast Point, Devils Swamp, Sweetwater, Nokuse) and seven NWFWMD/umbrella bank sites (Sandhill Lakes, Wards Creek, Wards Creek West, Cat Creek, Devil's Hole, Point Washington, Lynn Haven,) have service areas that include the subject watershed. In addition, one proposed private mitigation bank (Bear Creek) includes the subject watershed in its service area. As of March 9, 2012, the 11 existing mitigation banks/sites identified above collectively have approximately 600 palustrine wetland credits currently available. None of these existing banks/sites appear to provide estuarine credits.

It is important to recognize the temporal nature of mitigation credits and how inventories are affected by demand. While the availability of credits "today" is noteworthy, it is unclear as to the actual time they will be needed for this project. It is possible that credits available today from existing mitigation banks and sites may still be available at the time needed - the opposite situation is also possible for some or all of the banks and mitigation sites active "today". However, new banks may come on line between now and the time credits are actually needed (design and permitting phase) for this project. Given the high percentage of undeveloped land in this part of Florida, it is also clear that numerous opportunities for future mitigation sites exist. Finally and in the event that

this project results in impacts to estuarine wetlands and estuarine credits are not available, available out-of-kind credits may be utilized for such wetlands per regulatory agency approval.

4.3.5 Essential Fish Habitat

After ETAT review of the project in the EST, the NMFS responded with the following comment concerning EFH (comment and response presented in Appendix I):

- *Federal agencies which permit, fund, or undertake activities which may impact EFH must consult with NMFS and prepare an EFH assessment.*
- *Concerned about the maintenance of natural hydrologic patterns and freshwater inflow to estuarine waters, and about pollutants in stormwater runoff*

Coordination with NMFS is on-going. An EFH assessment report is provided as an appendix to the WER. Section 4.3.7 Water Quality addresses maintenance of hydrologic patterns and treatment of stormwater. ICE on EFH is discussed in Section 4.3.20. Any issues remaining to be resolved will be addressed in the Final EIS and be consistent with reasonable assurance per 23 CFR 771.133. The findings of the EFH assessment are summarized below.

Coastal and marine environments in the Gulf Coast Parkway study area include the eastern section of East Bay and creeks, swamps, and bayous that contain salt marsh habitats or that empty into estuarine habitats in East Bay. These include Sandy Creek, California Swamp, Laird Bayou, Boggy Creek, Callaway Creek, and other smaller creeks, swamps, and bayous that are used by managed fish species and their prey. The NMFS, during their field review of the study area, found EFH for postlarval penaeid shrimp; post larval/juvenile, subadult, and adult red drum; juvenile Spanish and king mackerel; juvenile and adult gray snapper; and juvenile gag grouper. In addition, the NMFS expressed concern about the project's potential impact on maintenance of the area's natural hydrology and freshwater inflow to the estuarine environment and the effects of increased traffic in the area, especially automobile associated pollutants carried by stormwater runoff from the road's impervious surface.

An *Essential Fish Habitat Assessment Report*[45] has been prepared and consultation is on-going in accordance with the **Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA)**. Consultation with the NMFS is required as part of the provisions of this act. EFH is defined as the water and substrate necessary for fish spawning, breeding, feeding, and growth to maturity. The MSFCMA established standards for fishery conservation and management, and created eight Regional Fishery Management Councils to apply those national standards in fishery management plans. The NMFS of the United States Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), is responsible for implementing this mandate. The NMFS preliminary comments and recommendations can be referenced in the Efficient Transportation Decision Making (ETDM) *Programming Summary Report*[32].

The EFH Assessment has determined that the Build Alternatives would have involvement with EFH and that there is potential for adverse effects to EFH. All of the Build Alternatives surveyed appear to have some potential direct and indirect effects on EFH (emergent marsh, bivalves, or marine benthic sediments). The potential for the project to have induced growth and cumulative effects on EFH is addressed in Section 4.3.20 of this report. For further information refer to the *Gulf Coast Parkway EFH Assessment Report*[45] completed for the project.

4.3.5.1 Survey Methodology

Methods for conducting the proposed EFH assessment were provided to the NMFS and the FFWCC on September 4, 2007, titled *Essential Fish Habitat Assessment Field Survey Methodology for Gulf Coast Parkway August 2007*. The NMFS approved the methodology on August 31, 2007 and the FFWCC approved the methodology on September 30, 2007. Certain deviations from the initially proposed methodology were adjusted

during the field survey and habitat evaluations based on field conditions and access limitations. Certain conditions such as well established areas of black needle rush (*Juncus romerianus*) allowed for modifications to the proposed field methods to collect less GPS location data and rely more on photo-interpretation to delineate and estimate emergent marsh areas within the proposed alternatives. The Braun-Blanquet scale (**Table 4-39**) was used to determine the degree of coverage of marine resources. For further detail regarding the survey methods utilized for assessing EFH refer to the *Gulf Coast Parkway EFH Assessment Report*[45].

Table 4-39: Braun-Blanquet Cover Scale

Braun-Blanquet Cover Class	Value
0	Absent
0.1	<5% Cover (solitary shoot)
0.5	>5% Cover (sparse, few shoots)
1	>5% Cover (several shoots)
2	5-25% Cover
3	25-50% Cover
4	50-75% Cover
5	75-100% Cover

4.3.5.2 EFH Observations per Survey Area

Alternatives 17/19 - North

This survey area corresponds with the Allanton Peninsula northwest of the ICWW navigational channel (**Figure 4-18**). This area was surveyed by boat and by walking/wading on September 7 and 12, 2007. The shoreline in this location was actively eroding and had sparse to no emergent vegetation. In some areas, the erosion has encroached into the upland ecotone and various species of shrubs and tree roots were exposed with some dead pine trees evident. Post EFH assessment, the alignment for Alternatives 17/19 was shifted slightly to the northeast to avoid an archeological site.

Submerged Aquatic Vegetation (SAV) were not observed in the alignment or immediate survey area.

Suitable eastern oyster (*Crassotrea virginica*) habitat was observed in various locations along the intertidal zone associated with the survey area. Solid substrate in this survey area available for oyster settlement includes woody debris, stumps, tree trunks, and sparse scattered clumps of oysters within the range of 10-20 adults per cluster depending on attachment substrate were observed. Adult oysters were observed to be in the 5-8 cm range. No spat were observed. The sparsely scattered oyster clumps were observed in the 30-50 cm depth range.

Fish and invertebrate species and estimates of abundance (or relative) observed during the survey include:

- Small unidentified baitfish – 10-50 individuals
- Jellyfish unidentified – 10-50 individuals
- Blue crab (*Callinectes sapidus*) 1-10 individuals

No marine mammals were observed during the survey.

Typical marine sediments in this area consisted primarily of firm to moderate sandy silt. This area and others surveyed in East Bay exhibit a noticeable change in marine sediments from a firmer nearshore marine sediment character, to a soft area of muck which was difficult to traverse by walking. In the areas that consisted of firm to

moderate marine sediments, evidence of tube worm presence was common (as was observed in similar survey areas with firm sediments).

Alternatives 17/19 - South

The portion of Alternatives 17/19 potentially involving EFH is located east of Tyndall AFB (**Figure 4-23**). The general survey area included the point of departure from land to the navigational channel of the ICWW. This area was surveyed by boat and by walking/wading on September 12, 2007. The western boundary of this alignment is adjacent to the mouth of a tidal marsh/stream system. The immediate vicinity of the tidal marsh/stream system (just outside of the alignment to the west) is in relatively stable condition with a buffer of black needle rush (*Juncus romerianus*) that appears to support stability of the stream interface with East Bay. Progressing to the east along the shoreline within the alignment, the monotypic black needle rush transitions to an eroding shoreline with exposed roots, woody debris, stumps and tree trunks. In some areas the erosion has encroached into the upland ecotone, creating a relatively unstable bluff with various species of shrubs and tree roots exposed.

Black needle rush in this location was observed to have a Braun-Blanquet cover estimate of 4. The photo interpreted estimated potential impact to emergent vegetation at this location is 0.1 acre.

A patch of SAV was observed to be located within the buffer area associated with this alternative alignment. The patch consisted solely of shoal grass (*Halodule wrightii)* and the perimeter of the patch was located with a Trimble GPS unit. The estimated area of SAV coverage is 0.058 acres. The depths observed were 70 cm for the nearshore edge and 84 cm for the waterward edge of the patch. The nearshore edge of the SAV patch varied 9-10 meters from the mean high tide line.

Suitable eastern oyster habitat was observed in various locations along the intertidal zone associated with this area. Solid substrate in this survey area available for oyster settlement includes woody debris, stumps, tree trunks, and sparsely scattered oyster clusters. Oysters within the range of 10-20 adults per cluster were observed depending on attachment substrate. The adult oysters were observed to be in the 5-8 cm range. No spat were observed. The sparsely scattered oyster clumps were observed in the 30-50 cm depth range. Scattered oyster clumps were primarily observed between the SAV edge and the mean high tide line.

Fish and invertebrate species and estimates of abundance (or relative) observed during the survey include:

- Small unidentified baitfish – 1-10 individuals
- Striped mullet (*Mugil cephalus*) – 1-10 individuals
- Blue crab (*Callinectes sapidus*) 1-10 individuals
- No marine mammals were observed during the survey.

Typical marine sediments in this area consisted of primarily firm to moderate sandy silt. This area and others surveyed in East Bay exhibit a noticeable change in marine sediments from a firmer nearshore marine sediment character, to a soft area of muck which was difficult to traverse by walking. Evidence of tube worm presence was observed in this survey area.

Total potential impacts to the open water/unconsolidated marine sediment within Alternatives 17/19 is approximately 50.8 acres.

Figure 4-23: EFH Locations Associated with Alternatives 17 and 19

Alternatives 8/14/15 – ICWW/Wetappo Creek

Alternatives 8/14/15 cross the ICWW/Wetappo Creek in a northeasterly to southwesterly direction (**Figure 4-24**). This area was surveyed by boat on September 5, 2007. The shoreline in this survey area consists of emergent marsh on the northern and southern shorelines, including a relatively thin, segmented marsh feature between the ICWW and an adjacent channel. The monotypic black needle rush marsh extends to an upland interface, on each side of the northern and southern locations of the survey area, dominated by a slash pine plantation and associated shrubs consistent with a fire suppressed system. Sawgrass was observed in various sized patches associated with the marsh ecosystems.

The dominant emergent vegetation marsh species in this survey area was black needle rush. The monotypic black needle rush observed in all settings in this survey area was observed to have a Braun-Blanquet cover estimate of 3 to 4. Estimated potential impacts to emergent vegetation at this location is 6.2 acres

Estimated potential impacts to the open water/unconsolidated marine sediment habitat within this area is approximately 3.4 acres

SAV was not observed in the alignment or immediate survey area.

This area did not appear to exhibit suitable oyster habitat, likely due to a lack of woody debris or other suitable substrate to support spat settlement as well as the steep banks at the edge of the emergent marsh.

Some scattered bivalve shell fragments were observed and likely the result of blue crab predation as commonly occurs in these ecosystems. Ribbed mussels were observed in colonizing clusters at the base of the black needle rush at the marsh/stream interface as is common for the species. The entire emergent marsh system was not surveyed to establish the limits and population estimates of this species, but future efforts may be necessary to quantify potential impacts to overall EFH resources for the Recommended Alternative.

Fish and invertebrate species and estimates of abundance (or relative) observed during the survey include:

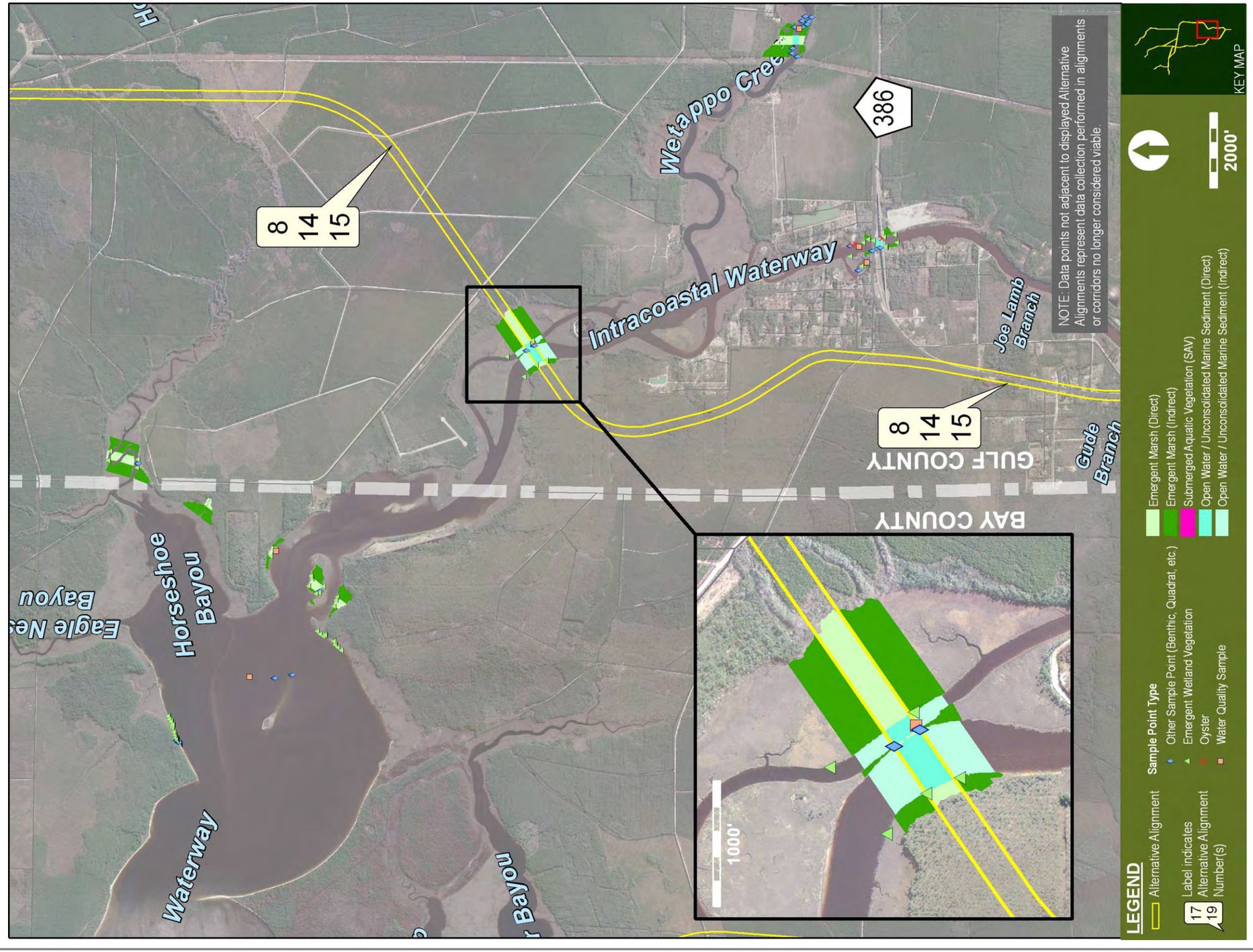
- Small unidentified baitfish – 50 - 100 individuals
- Striped mullet (*Mugil cephalus*) – 3 individuals
- Blue crab (*Callinectes sapidus*) - 1 individual
- Fiddler crab (*Uca pugnax*) – 10-50 individuals

Very sparse populations of marsh periwinkle were observed on black needle rush during the survey.

No marine mammals were observed during the survey.

Typical marine sediments in this area consisted primarily of firm sediments adjacent to the emergent marsh that dropped sharply to approximately 2 meters and deeper from the emergent marsh edge. The steep sloping banks did not appear to support tube worms and limited intertidal availability for oysters.

Figure 4-24: EFH Locations Associated with Alternatives 8, 14, and 15



4.3.5.3 EFH Discussion

Data collected during the EFH assessment survey was subject to weather conditions, tidal events and other various environmental factors. The area within the EFH survey limits is subject to frequent disturbance by commercial and recreational vessels. The regular maintenance dredging of the navigational channel of the ICWW could potentially affect water quality and marine sediments, temporarily. The FDEP issued a permit on October 10, 2012 to the USACE for maintenance dredging of the Gulf ICWW in Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf, and Franklin Counties, as necessary, until October 10, 2022.

Table 3-29 in Section 3 of this report presents a list of managed fish species having the potential to occur within EFH present in the project study area. The majority of potential impacts to EFH will likely occur to emergent marsh and open water/unconsolidated marine sediment habitats. Most emergent marsh habitat (especially large expanses) observed was of relatively high quality. A limited amount of shoreline habitat exhibited varying degrees of erosion. Based on aerial photo interpretation and field survey data, the following potential direct impacts to emergent marsh and open water/unconsolidated marine sediment habitats were estimated utilizing the proposed right-of-way width of the alternatives (**Table 4-40**). This conservative approach assumes that the entire right-of-way (not the width of the bridge) will result in direct impacts where in actuality the permanent direct impacts are likely confined to the area of the pilings. Indirect and temporary impacts to EFH are discussed in subsections 4.3.5.4 and 4.3.5.6, respectively.

Table 4-40: Potential Direct Impacts to Emergent Marsh and Open Water Habitats

Alternative	Potential Emergent Marsh Impacts (acres)	Potential Open Water/Unconsolidated Marine Sediment Impacts (acres)	Total EFH (acres)
Alternatives 17/19 (East Bay)	0	50.8	50.8
Alternatives 8/14/15 (ICWW/Wetappo Creek)	6.2	3.4	9.6

SAV survey data represents an important metric for assessing potential impacts to EFH. Based on the SAV surveys conducted in 2007, there appears to be no direct impact to SAV with any of the Alternatives.

Based on field observations, data collected during field surveys, and data obtained from FFWCC, oyster occurrence appears to be limited by the availability of hard submerged substrate, intertidal depths, salinity, associated emergent marsh species, and benthic sediment type. The overall assessment of potential impacts to oysters for all the alternatives appears to be minimal.

Impacts to bivalves (mussels) and other benthic resources (tube worms) are likely to occur within the alternatives' alignments crossing EFH.

4.3.5.4 Direct and Indirect Effects on Essential Fish Habitat

Pursuant to the methodology chosen for construction of new structures there may be permanent and temporary effects to EFH in the study area. Permanent and/or widespread effects would depend on the particular type of impacts and the resource impacted. The area for these impacts extends from the right-of-way line of the proposed alternatives outward 300 feet.

Potential indirect effects to EFH associated with this project could include water quality degradation from stormwater runoff or roadway spills, changes in hydrology, edge effect impacts from filling wetlands, habitat fragmentation and potential changes in wildlife utilization, increased constraints on implementing prescribed

burning management plans, and creation of a conduit/corridor (roadway for exotic/invasive species range expansion. Potential indirect involvement with EFH was determined by calculating the EFH area within the 300-foot buffer (indirect impacts) associated with the alternatives (**Table 4-41.**)

Table 4-41: Potential Indirect Impacts to Emergent Marsh, Open Water, and Submerged Aquatic Vegetation Habitats

Alternative	Potential Emergent Marsh Impacts (acres)	Potential Open Water/ Unconsolidated Marine Sediment Impacts (acres)	Potential SAV Impacts (acres)	Total EFH (acres)
Alternative 17/19 (East Bay)	0.10	120.90	0.06	121.06
Alternative 8/14/15 (ICWW/Wetappo Creek)	8.10	16.90	0.00	25.00

When comparing both direct and indirect EFH involvement across Alternatives, Alternative 17/19 involves fewer acres of emergent marsh habitat than Alterative 8/14/15. Conversely, Alternative 17/19 involves significantly more open water habitat than Alterative 8/14/15. For both Alternatives, potential involvement with SAV is negligible.

4.3.5.5 Effects on Habitat Areas of Particular Concern

Habitat Areas of Particular Concern (HAPC) are defined as specific subsets of EFH that provide extremely important ecological functions or are especially vulnerable to degradation. HAPC are designated based on one or more of the following reasons: importance of the ecological function provided by the habitat; extent to which the habitat is sensitive to human-induced environmental degradation; whether, and to what extent, development activities are, or will be stressing the habitat type and rarity of the habitat type (NMFS, 2007). There are no HAPCs present in the vicinity of the study area.

4.3.5.6 Effects on Managed and Associated Fisheries Species

While the EFH review indicates that nineteen (19) of the representative managed species and thirteen (13) highly migratory species have a potential (low or medium) for occurrence in waters associated with the project area, *the anticipated impact to these species and EFH is not significant*. Due to the close proximity of the alternatives it can be assumed that the impacts would be the same for all the species. A total of 50.8 acres of open water estuarine habitat (Alternatives 17/19) and 3.4 acres (Alternatives 8, 14 and 15) estuarine/creek habitat EFH are located within the respective alternatives. Additionally, there are a total of 6.2 acres of estuarine emergent marsh EFH located within Alternatives 8/14/15. This represents a small percentage of the total amount of EFH present within the regional landscape including all of East Bay and Wetappo Creek. It is anticipated that the potential impact to this habitat will be greatly minimized and in some cases eliminated with further modifications during design. The remaining impacts will be mitigated.

Most of the managed species determined to have potential involvement with the alternatives only utilize the associated EFH for a portion of their lifecycle. Juvenile and adult fish species which might visit the area are mobile and would not be affected by the project. Slower moving species, such as shrimp and crab, would not be affected due to the relatively small amount of habitat impact compared to the available habitat present within the immediate surrounding area. *Therefore, the proposed project is not anticipated to have a significant effect on the lifecycle of these species. The proposed project will have minimal adverse effect on EFH.*

In addition, there may be temporary impacts to EFH during construction. These temporary impacts can vary depending on the type of construction equipment used. Examples of temporary construction impacts to EFH include increased sediment loads in stormwater runoff from the construction site and increased turbidity during

in-water work. Both of these contribute to impacts on benthic aquatic habitats. Specific construction impacts will not be known until the construction methodology has been coordinated. However, these impacts are temporary and with the utilization of construction controls and BMP during construction these impacts should be minimized. In addition, any EFH impacts will be mitigated.

4.3.5.7 Proposed Conservation Efforts

The proposed conservation efforts shall utilize information provided in this EFH assessment, guidance from state and federal agencies, and BMP associated with work of this nature. Recommendations to conserve natural resources in the area may include, but not be limited to: working within adjacent areas devoid of marine resources, avoid placing equipment and debris in adjacent marine resource areas, incorporating turbidity controls, utilizing vessels that can operate in depths adequate to not scour or propscar marine resources, and removal of all construction debris and equipment at completion of the project. Monitoring for marine resources during all phases of the construction project should be implemented to identify potential impacts and remedy any impacts that may occur during construction, permitted and otherwise.

4.3.5.8 Avoidance and Minimization Measures

Avoidance and minimization measures have been implemented during the development of alternatives, by shifting alignments to avoid and/or minimize involvement with EFH and by proposing that the bridges span the entire EFH associated with East Bay and Wetappo Creek, eliminating significant potential fill areas. It is further anticipated that only bridge pilings will be located within the estuarine emergent and open water/unconsolidated marine sediment habitats. However, as requested by the NMFS, if Alternatives 17 or 19 are selected as the preferred alternative, an additional seagrass survey during the June-August prime growing season will be completed prior to construction.

Avoiding and minimizing impacts to marine resources during construction will require implementing BMP associated with works in waters of the state. Different seasonal conditions will relate to various species presence and water depths available for construction activities. Adequate water depths should be ensured during the proper use of appropriate construction vessels and equipment for this operation. Specific protocol will be developed to ensure adequate demobilization and stabilization or removal of debris when possible during potentially damaging tropical storm weather.

A stormwater collection and treatment system will be provided as part of the project to protect surface water quality.

The contractor shall be required to develop, implement and adhere to a “marine resource protection plan” to ensure that marine resources within and outside of the right-of-way are not damaged by construction activities. This plan may involve strategies such as marking off adjacent marine resources outside of the proposed project’s alignment with buoys, so that construction related boat traffic does not affect adjacent marine resources, i.e., emergent vegetation, seagrass, etc., and barges are not moored directly on or over marine resources. Consideration should be taken to implement strategies to reduce impacts to the existing EFH resources, where possible. For instance, depending on the specific construction activities chosen for this area, some debris (concrete and woody debris) associated with oyster resources may need to be removed for public safety considerations. Impacts such as these should be considered in the overall proposed methodology.

4.3.5.9 Best Management Practices

Construction activities could have short-term, temporary impacts on EFH, such as increased sediment loads in stormwater runoff from the construction site and increased turbidity during in-water work. Both of these contribute to impacts on benthic aquatic habitats.

Appropriate construction controls and BMP will be implemented to ensure protection of marine resources. Construction BMP should incorporate, but not be limited to: working within adjacent areas devoid of marine resources, instituting BMP to reduce direct impacts to emergent marsh systems, adequate turbidity controls, utilizing vessels that can operate in depths adequate enough to not scour or prop scar the marine sediments/resources, continual monitoring for presence of wildlife species in the work area, and removal of all construction debris and equipment at completion of the project.

Although not anticipated, if explosives should be utilized during construction activities, then the *Guidelines for the Protection of Manatees and Sea Turtles during the Use of Explosives in the Waters of the State of Florida* should be implemented. The Manatee Construction Conditions set forth by the FFWCC and the USFWS must be followed throughout a construction process. Monitoring for such species shall be conducted throughout the construction process to ensure BMP are being followed.

4.3.5.10 Identification of Unavoidable Effects

It is expected that unavoidable effects will be limited to minor direct impacts to individuals of some managed or associated fish and invertebrate species. Potential direct impacts to the various EFH resources associated with the project area are likely to occur.

Communication with appropriate resources agencies will be important as the project develops through further phases of study and/or design. Impacts to emergent marsh are likely to be the most significant for consideration when assessing the various alternatives. As requested by the NMFS, if Alternatives 17 or 19 are selected an additional seagrass survey during the June-August prime growing season will be completed prior to construction.

4.3.5.11 Mitigation Strategies

Mitigation will be required for direct and indirect impacts to wetlands associated with EFH (emergent marsh). At this point in project development, FDOT is not prepared to state definitely how impacts to these wetlands will be mitigated due to current lack of any existing mitigation banks with estuarine credits. However, if at the time of permitting there are still no mitigation banks with estuarine credits, out-of-kind credits will be utilized with regulatory agency approval. Therefore, it is anticipated that EFH impacts which result from the construction of this project will be mitigated pursuant to Section 373.4137, FS to satisfy all mitigation requirements of Part IV. Chapter 373, FS and 33 U.S.C. s. 1344. Compensatory mitigation for this project will be completed through the use of mitigation banks and any other mitigation options that satisfy state and federal requirements.

It is important to recognize the temporal nature of mitigation credits and how inventories are affected by demand. While the availability of credits "today" is noteworthy, it is unclear as to the actual time they will be needed for this project. It is possible that credits available today from existing mitigation banks and sites may still be available at the time needed - the opposite situation is also possible for some or all of the banks and mitigation sites active "today". However, new banks may come on line between now and the time credits are actually needed (design and permitting phase) for this project. Given the high percentage of undeveloped land in this part of Florida, it is also clear that numerous opportunities for future mitigation sites exist. In the event that this project results in impacts to estuarine wetlands and estuarine credits are not available, available out-of-kind credits may be utilized for such wetlands per regulatory agency approval. Any "mitigation for EFH" would be addressed by virtue of compensating for project-related wetland impacts.

Since it has been determined the project "may affect" EFH resources, the FDOT intends to reinitiate consultation with NMFS for these resources after the public hearing and during development of the final NEPA document (or final design and permitting of the project) once all agency and public comments have been received and evaluated and a preferred alternative has been selected. At that time NMFS will work with the FDOT to minimize the

projects impacts to EFH resources. If for some reason consultation must be reinitiated during final design and permitting, FDOT will complete all consultation and document compliance in a subsequent project reevaluations prior to the project beginning construction. Consistent with 23 CFR 771.133, completion of consultation at a later phase of project development is a commitment by FDOT.

4.3.6 Aquatic Preserves

Florida has designated 41 areas throughout the state as aquatic preserves and all but four of these are located along Florida's 8,400 miles of coastline. There are two aquatic preserves near the project study area: St. Joseph Bay Aquatic Preserve and St. Andrew Aquatic Preserve (**Figure 4-25**).

None of the alternatives would have a direct or indirect adverse effect on either of the aquatic preserves, since both preserves are located well beyond the project study area.

Figure 4-25: Aquatic Preserves in the Vicinity of the Gulf Coast Parkway Alternatives

4.3.7 Water Quality

After ETAT review of the project in the EST, the USEPA and the NWFWMD responded with the following comments concerning water quality (comments and responses presented in Appendix I):

- *USEPA – Alternatives that traverse more open surface waters could present greater issues for handling surface runoff. More technical data on brackish and fresh water resources are needed to make a reasoned conclusion concerning impacts.*
- *NWFWMD – Nonpoint discharges at stream crossings and widespread nonpoint pollution from intensified land uses are of concern. Direct and cumulative impacts should be limited. Appropriate permitting requirements must be fulfilled.*

A Location Hydraulics Report has been prepared and is summarized below. The impact minimization process is discussed in Section 2 of this report. An ICE analysis, coordinated with ETAT agencies, is summarized in Section 4.3.20. These comments are addressed in summary form in Section 3.6.1 and in the section below, as follows:

Surface waters in the study area and their classifications have been presented in Section 3 of this report. **Table 4-42** summarizes the proposed crossings of named surface waters by the alternatives. Some of these are new crossings and some will involve the replacement of an existing structure, as indicated in the table.

Table 4-42: Named Surface Water Crossings by Alternative

Surface Water	Class*	Alternative				
		8	14	15	17	19
Panther Swamp	3	58 ft. bridge replacing ex. bridge	58 ft. bridge replacing ex. bridge	58 ft. bridge replacing ex. bridge	58 ft. bridge replacing existing structure	58 ft. bridge replacing existing structure
Cypress Creek	3	79 ft. bridge replacing ex. bridge	79 ft bridge replacing ex. bridge	79 ft. bridge replacing ex. bridge	New 500 ft. bridge	New 500 ft. bridge
ICWW/East Bay	2	-	-	-	New 9100 ft. high level bridge	New 9100 ft. high level bridge
Olivers Creek	2	-	-	-	New 68 ft. bridge	New 68 ft. bridge
ICWW/Wetappo Creek	3	New 7000 ft. high level bridge	New 7000 ft. high level bridge	New 7000 ft. high level bridge	-	-
Horseshoe Creek	3	New culvert	New culvert	New culvert	-	-
Horseshoe Creek	3	New culvert	New culvert	New culvert	-	-
Little Sandy Creek	3	New 84 ft. bridge	New 84 ft. bridge	New 84 ft. bridge	-	-
Britt Branch	3	New 82 ft. bridge	New 82 ft. bridge	New 82 ft. bridge	-	-
Wildcat Swamp	2	72 ft. bridge replacing ex. culvert	72 ft. bridge replacing ex. culvert	72 ft. bridge replacing ex. culvert	-	-
Wildcat Swamp	3	New 47 ft. bridge	New 47 ft. bridge	New 47 ft. bridge	-	-
Sandy Creek	2	300 ft. bridge replacing ex. 227 ft. culvert	300 ft. bridge replacing ex. 227 ft. culvert	300 ft. bridge replacing ex. 227 ft. culvert	-	-
Cooks Bayou/Olivers Creek	2	68 ft. bridge replacing ex. culvert	68 ft. bridge replacing ex. culvert	68 ft. bridge replacing ex. culvert	-	-
Cushion Creek	2	36 ft. bridge replacing ex. culvert	36 ft. bridge replacing ex. culvert	36 ft. bridge replacing ex. culvert	-	-
Callaway Creek	2	New 1000 ft. bridge	New 1000 ft. bridge	New 1000 ft. bridge	New 1000 ft. bridge	New 1000 ft. bridge
Big Branch	3	-	New culvert	-	-	New culvert
Bayou George & Island Branch	1	-	New 205 ft. bridge	-	-	New 205 ft. bridge
Beefwood Branch	3	-	New 70 ft. bridge	-	-	New 70 ft. bridge
Sandy Creek	2	-	-	New 4,500 ft. bridge	-	-
Headwaters Bayou George	1	-	-	New culvert	-	-

*Class based on alignment falling within drainage basin as identified in GIS see **Figure 4-26**.

There are also crossings of unnamed drainageways under each alternative. **Table 4-43** provides the total number of bridges and culverts required for each alternative and the approximate total length of bridges. **Figure 4-26** shows the locations of proposed bridges and culverts. Replacement structures have been sized to perform in a manner equal to or better than existing structures, and backwater elevations are not expected to increase. The hydraulic structures proposed along new alignments will be designed to cause minimal changes in flood stages and flood limits. These changes will not result in any significant impacts on the natural and beneficial floodplain values or any significant changes in flood risk or damage. Please refer to the *Location Hydraulic Report*[47] prepared for this project for a detailed discussion of the location and sizing of bridges and culverts.

Table 4-43: Proposed Bridges and Culverts by Alternative

Alternative	Number of High Level Bridges	Approximate Length of High Level Bridge (in feet)	Number of Low Level Bridges	Approximate Length of Low Level Bridges (in feet)	Number of Box Culverts	Number of Small Culverts
8	1	7,000	10	1,796	12	19
14	1	7,000	12	2,071	16	24
15	1	7,000	12	6,384	14	26
17	1	9,100	4	1,626	3	13
19	1	9,100	6	1,903	5	19

There is potential for some of the Build Alternatives to have involvement with the drainage basins of Class I and Class II surface waters (**Figure 4-26).** Those alternatives potentially involved with Class I waters include Alternatives 14, 15, and 19. The northern extent of Alternative 15 crosses the south fork of Bear Creek (Class I) just prior to intersecting US 231. Alternatives 14 and 19 cross the upper reaches of Bayou George Creek (Class I) near Old Majette Tower Road. All alternatives have potential for involvement with the drainage basins to Class II and Class III waters.

The FDEP is implementing a statewide watershed management approach for restoring and protecting the water quality of Florida surface waters. Under Section 303(d) of the 1972 Federal Clean Water Act and the 1999 Florida Watershed Restoration Act (Chapter 92-223, Laws of Florida), Total Maximum Daily Loads (TMDL) must be developed for all waters that do not meet their designated uses[32].

In June 2003, the FDEP published the *Choctawhatchee-St. Andrews Basin Status Report*[48], which provided a preliminary identification of potentially impaired waterbodies. In 2006, the FDEP published the *Choctawhatchee-St. Andrews Water Quality Assessment Report*[49] which updated the information in the Status Report. The latter report contained lists of potentially-impaired and verified-impaired waterbody segments Waterbody Identification (WBIDs). Subsequently, during a second water quality assessment cycle, these lists were revised, with some WBIDs being delisted and some being moved from the potentially-impaired list to the verified-impaired list. The current verified-impaired waterbody segments for the study area are shown in **Figure 4-27. Table 4-44** identifies the potentially affected WBIDs by name, lists the parameter(s) for which each has been identified as impaired, associates each alternative with the affected WBID, and identifies the area of involvement.

Figure 4-26: Proposed Locations of Build Alternatives' Bridges and Culverts within Class I, Class II and Class III Drainage Basins

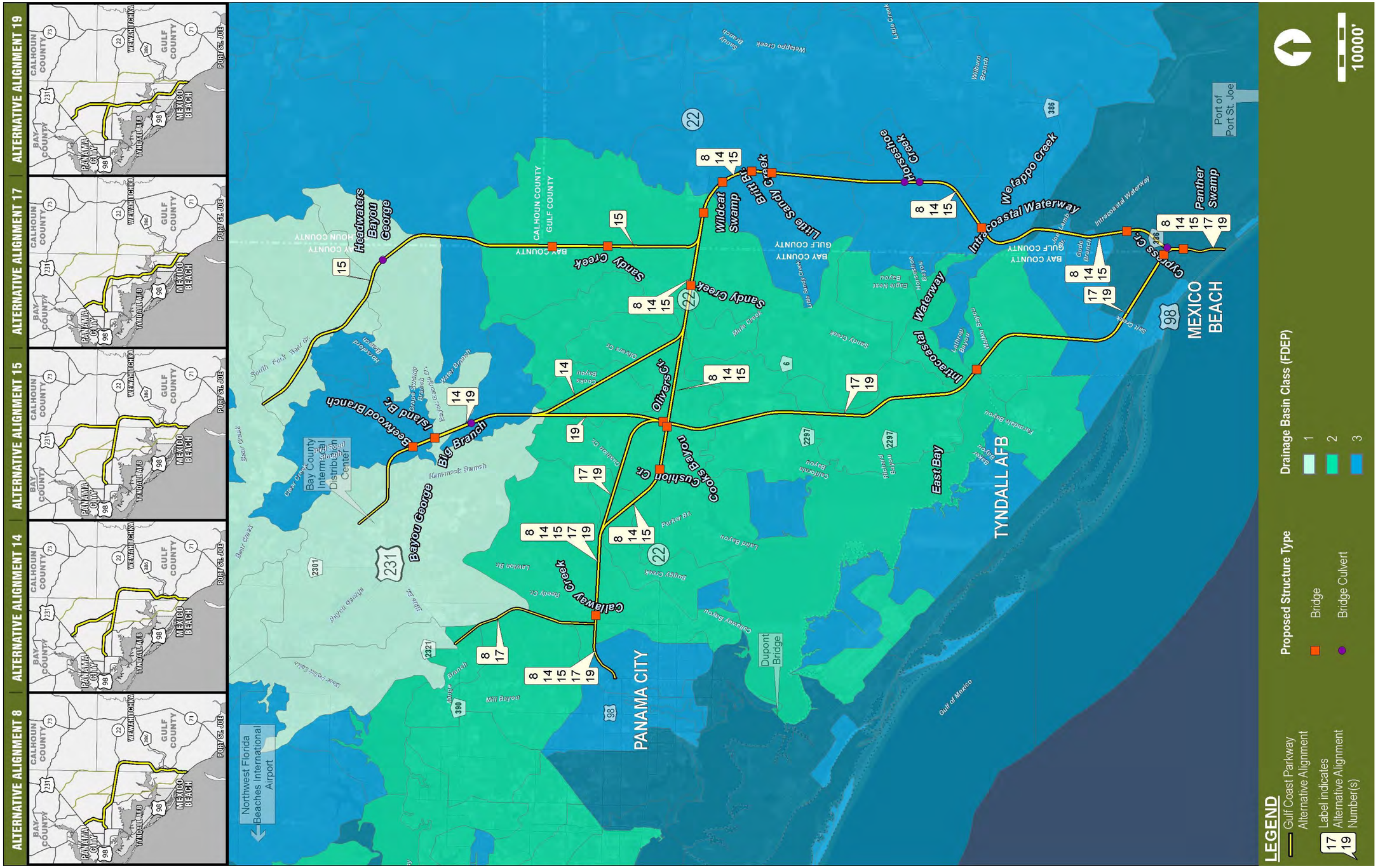


Figure 4-27: Alternatives Involvement with Verified Impaired Waters

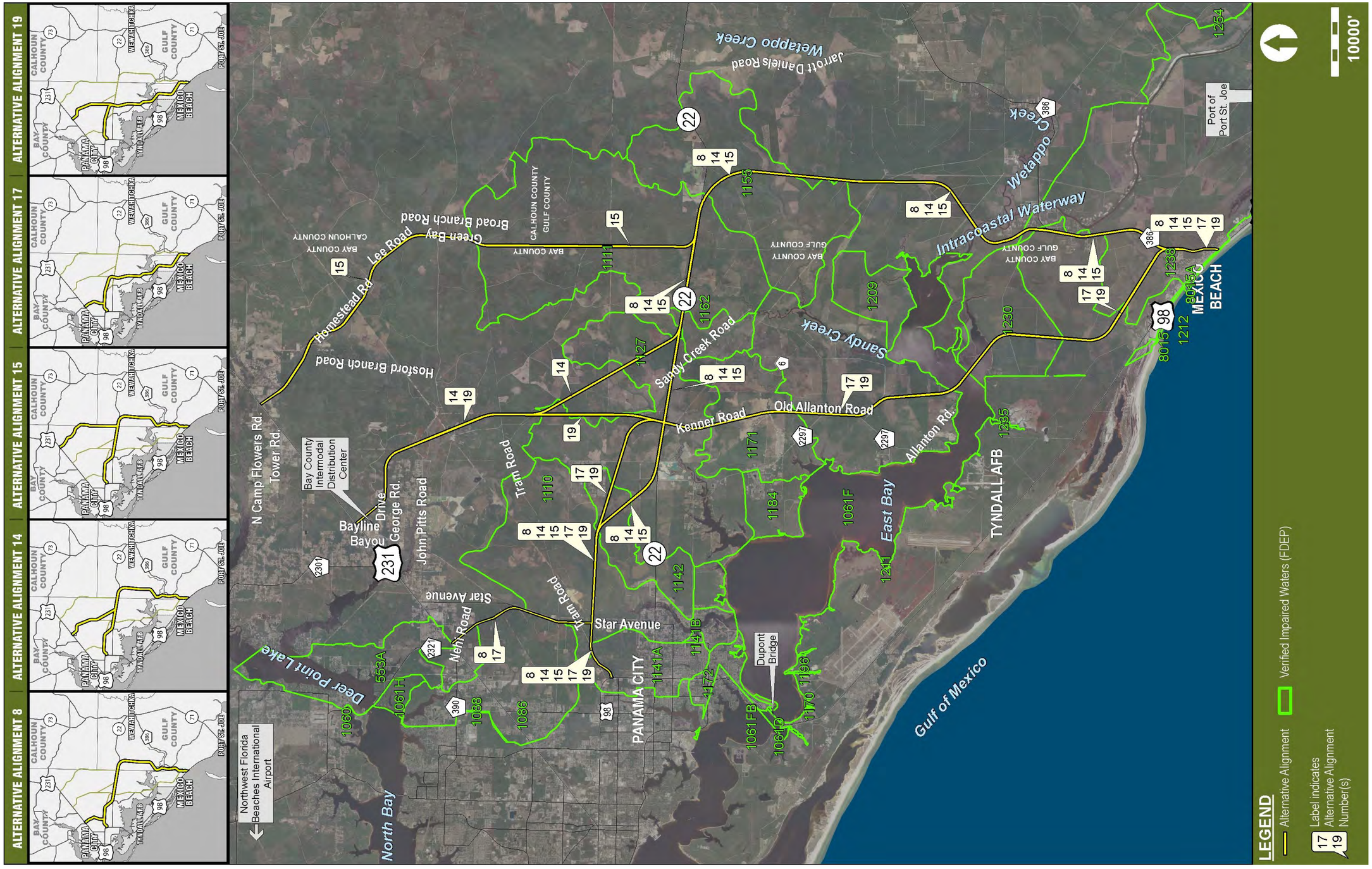


Table 4-44: Alternatives' Involvement with Verified Impaired Water Body Segment Drainage Basins

Alternative	WBID	Water Body	Impairment	Involvement with Verified Impaired Waters (in Acres)
8	1111	Sandy Creek	Fecal Coliform, Bacteria (in shellfish)	102
	1162	Mule Creek	Fecal Coliform	12
	1142	Boggy Creek	Fecal Coliform	39
	1238	Panther Swamp	Mercury (in Fish Tissue)	113
	1127	Laird Bayou	Mercury (in Fish Tissue)	147
	1086	Mill Bayou	Mercury (in Fish Tissue)	31
	1155	Little Sandy Creek	Dissolved Oxygen (Nutrients)	85
	1141A	Parker Creek	Dissolved Oxygen (Nutrients)	25
	1110	Calloway Bayou	Mercury (in Fish Tissue)	97
			Total Acres	**651**
14	1111	Sandy Creek	Fecal Coliform, Bacteria (in shellfish)	102
	1162	Mule Creek	Fecal Coliform	12
	1142	Boggy Creek	Fecal Coliform	39
	1238	Panther Swamp	Mercury (in Fish Tissue)	113
	1127	Laird Bayou	Mercury (in Fish Tissue)	215
	1155	Little Sandy Creek	Dissolved Oxygen (Nutrients)	85
	1141A	Parker Creek	Dissolved Oxygen (Nutrients)	25
	1110	Calloway Bayou	Mercury (in Fish Tissue)	80
			Total Acres	**671**
15	1111	Sandy Creek	Fecal Coliform, Bacteria (in shellfish)	293
	1162	Mule Creek	Fecal Coliform	12
	1142	Boggy Creek	Fecal Coliform	39
	1238	Panther Swamp	Mercury (in Fish Tissue)	113
	1127	Laird Bayou	Mercury (in Fish Tissue)	147
	1155	Little Sandy Creek	Dissolved Oxygen (Nutrients)	85
	1141A	Parker Creek	Dissolved Oxygen (Nutrients)	25
	1110	Calloway Bayou	Mercury (in Fish Tissue)	80
			Total Acres	**794**
17	1142	Boggy Creek	Fecal Coliform	42
	1061F	East Bay (East Segment)	Bacteria (in Shellfish), Mercury (in Fish Tissue)	21
	1238	Panther Swamp	Mercury (in Fish Tissue)	94
	1171	California Bayou	Mercury (in Fish Tissue)	75
	1127	Laird Bayou	Mercury (in Fish Tissue)	119
	1086	Mill Bayou	Mercury (in Fish Tissue)	31
	1230	Walker Bayou	Mercury (in Fish Tissue)	96
	1141A	Parker Creek	Mercury (in Fish Tissue)	25
	1110	Calloway Bayou	Mercury (in Fish Tissue)	97
			Total Acres	**600**
19	1142	Boggy Creek	Fecal Coliform	42
	1061F	East Bay (East Segment)	Bacteria (in Shellfish), Mercury (in Fish Tissue)	21
	1238	Panther Swamp	Mercury (in Fish Tissue)	94
	1171	California Bayou	Mercury (in Fish Tissue)	75
	1127	Laird Bayou	Mercury (in Fish Tissue)	169
	1230	Walker Bayou	Mercury (in Fish Tissue)	96
	1141A	Parker Creek	Mercury (in Fish Tissue)	25
	1110	Calloway Bayou	Mercury (in Fish Tissue)	80
			Total Acres	**602**

From **Figure 4-27**, it can be seen that all the Gulf Coast Parkway project alternatives have involvement with five of the same water body drainage basins (WBIDs 1238, 1127, 1110, 1141A and 1142). Because all alternatives begin at the intersection of US 98 and CR 386 and then follow CR 386 to the north, all have involvement with the Panther Swamp basin (WBID 1238); and because of their Tram Road connection to US 98 (Tyndall Parkway), all alternatives have the potential for involvement with the Calloway Creek basin (WBID 1110), the Parker Creek basin (WBID 1141A); the Boggy Creek basin (WBID 1142), and Laird Bayou basin (WBID 1127). While all alternatives have potential involvement with the Laird Bayou basin (WBID 1127), the extent of their involvement varies, depending on the alternative, from a minimum of 119 acres under Alternative 17 to a maximum of 215 acres under Alternative 14.

Alternatives 17 and 19 have additional potential involvement with three other drainage basins that Alternatives 8, 14, and 15 do not. These are WBID 1061F [East Bay (East Segment)], WBID1171 (California Bayou), and WBID 1230 (Walker Bayou), Alternatives 8, 14, and 15 have involvement with four drainage basins that Alternatives 17 and 19 do not. These are WBID 1111 (Sandy Creek), WBID 1162 (Mule Creek), and WBID 1155 (Little Sandy Creek). The only other difference among the alternatives is that Alternatives 8 and 17 also have involvement with WBID 1086 (Mill Bayou). Alternative 8 and 17 also have the potential to have a minor involvement with the Deerpoint Lake Basin (WBID 553A), which is bounded by US 231 in the vicinity of CR 390.

Of the twelve drainage basins, 12 are impaired for mercury (in fish tissue), one (WBID 1061F) of which is also impaired for bacteria; three are impaired for fecal coliforms, one (WBID 1111) of which is also impaired for bacteria; and two are impaired for Dissolved Oxygen (nutrients). At this time, the only waterbodies or waterbody segments that may potentially be affected by the project alternatives and have verified impairment and require the development of TMDLs are those impaired for mercury (in fish tissue). A statewide TMDL for mercury is being developed by the FDEP. The purpose of the TMDL is to establish allowable loadings that will allow for a reduction of mercury in fresh and marine waters to address the human health issue associated with elevated levels of mercury found in fish.

Alternatives 17 and 19 have the least total involvement (600 and 602 acres, respectively, with impaired waters, while Alternative 15 has the most total involvement (794 acres). Although stormwater collection and treatment facilities that provide the required level of treatment prior to discharge to surface waters, there remains the potential for contaminants to enter surface waters during severe storm events that produce runoff in excess of the design capacity of the facilities.

Contaminants that are degrading water quality are derived from a variety of point and non-point sources. Among the most significant point sources are industrial waste disposal sites, municipal landfills, leaking septic tanks, and occasional accidental spills. Non-point pollutant sources, which account for approximately 80% of the water quality degradation, include agricultural run-off, mine drainage, urban and highway runoff, and runoff from lawns and natural areas[37].

The following discussion on contaminants in highway runoff is taken from an FHWA Environmental Technology Brief entitled "*Is Highway Runoff A Serious Problem?*"[50] The most common contaminants in highway runoff are heavy metals, inorganic salts, aromatic hydrocarbons and suspended solids. The presence of undesirable contaminants in surface or ground water may interfere with the vital functions of the organisms living in it or from it. Research is being conducted by FHWA to determine the effects contaminants in road run off have on water quality. Inorganic salts are usually used for the deicing of roads in northern climates and not normally needed in Florida and will not be addressed further. Heavy metals do not usually create a toxicity problem. "Toxicity depends on the physical and chemical form of the heavy metals, their availability to aquatic organisms, and existing conditions of the receiving waters. Highway runoff may contain higher concentrations of metals, particularly: lead, zinc, iron, chromium, cadmium, nickel, and copper…." however, these "heavy metals generally undergo physical, chemical, and biological transformations as they reach adjacent ecosystems. Sometimes they

are taken up by plants or animals, or adsorbed onto clay particles. Other times, they settle to bottom sediments, or re-dissolve back into solution. Particulate fractions settling to the bottom surface of receiving waters may develop into sediments after several years of continuous deposition. These sediments may or may not leach metals depending on the condition and sensitivity of the receiving water….Various studies have revealed that low pH levels may also trigger metal solubility and leaching, especially when pH levels drop below 7. However, this may not be the case in waters under different conditions. The potential leaching of copper, iron, chromium, and nickel, for example, is very limited or even unlikely to occur in natural waters where aerobic conditions are maintained."

"The form of a metal and its availability to organisms determine in great part the toxicity of water. Water with high total metal concentrations may indeed be less toxic than one having lower concentrations but different forms of the same metal. Ionic copper, for instance, is more harmful to aquatic organisms than organically bound or elemental copper."

However, the adverse effects of contaminated run-off can be minimized through structural or non-structural BMP or through a combination of both. Structural BMP operate by physically trapping runoff until contaminants settle out or are filtered through the underlying soils. Non-structural BMP are source control practices such as street sweeping, land use planning, vegetated buffer areas, and fertilizer application controls. They are used to reduce the initial concentration and accumulation of contaminants in runoff[37].

Structural BMP consist of infiltration technologies, detention, retention, and vegetated practices, filtering systems, and porous pavements. Infiltration technologies make use of the physical chemical and biological interactions between soil and water. Infiltration trenches and basins are most effective in removing total suspended solids, bacteria, and metals from highway runoff[38]. Detention and retention ponds provide both water quantity and water quality control since they store runoff temporarily and settle or retain suspended solids and other contaminants. Detention ponds are known to be highly effective in the removal of nutrients and heavy metals. Wetland and shallow marsh systems, use the nutrient uptake of vegetation to enhance constituent removal, but are not as effective as detention ponds in the removal of metals. Vegetated swales and filter strips are used where there is limited land space to catch and filter runoff and to enhance biological uptake of contaminants. Filtering systems consist of a sedimentation area to retain large particles and a filter chamber that filters and removes suspended constituents. Porous pavements allow stormwater to percolate through the pavement and infiltrate into the soil underneath. They are only suitable for light duty roads, sidewalks, parking lots, and other impervious surfaces with limited vehicle use.

The No Build Alternative would not alter existing conditions; thus, any untreated stormwater from existing roads would continue to run into surface waters with no improvement in water quality being achieved.

All of the Build Alternatives would increase the impermeable surface area and, therefore, the volume of stormwater runoff. Therefore, all of the Build Alternatives would provide for the collection and treatment of stormwater runoff prior to discharge to surface waters. Since the alternatives utilize some existing road alignments, they will have the added benefit of treating runoff that was not previously being collected. Runoff from paved roads carries contaminants such as oils and heavy metals, while runoff from unpaved roads contributes heavy loads of sediments to surface waters. **Table 4-45** compares the amount of existing roads incorporated into each alternative and **Table 4-46** summarizes each alternative's incorporation of paved and unpaved roads.

Table 4-45 Comparison of Existing Roads Incorporated by Each Alternative

Existing Road	Alternative									
	8		14		15		17		19	
	Paved (Y/N)	Distance (feet)	Paved (Y/N)	Distance (feet)	Paved (Y/N)	Distance (feet)	Paved (Y/N)	Distance (feet)	Paved (Y/N)	Distance (feet)
CR 386	Y	23,126	Y	23,126	Y	23,126	Y	5,600	Y	5,600
Unnamed Road (South of SR 22)	N	7,091	N	7,091	N	7,091	N	N/A	N	N/A
SR 22	Y	39,154	Y	39,154	Y	39,154	Y	N/A	Y	N/A
Unnamed Road (West of CR 386)	N	N/A	N	N/A	N	N/A	N	8.923	N	8,923
Unnamed Road (South of East Bay)	N	N/A	N	N/A	N	N/A	N	11,832	N	11,832
Old Allanton Road/Kenner Road	N	N/A	N	N/A	N	N/A	N	24,379	N	24,379
Green Bay Broad Branch Road	N	N/A	N	N/A	N	8,324	N	N/A	N	N/A
Lee Road	N	N/A	N	N/A	N	3,503	N	N/A	N	N/A
Homestead Road	N	N/A	N	N/A	N	2,443	N	N/A	N	N/A
Star Avenue	Y	11,300	Y	N/A	Y	N/A	Y	11,300	Y	N/A
Nehi Road	N	6,342	N	N/A	N	N/A	N	6,342	N	N/A
Tram Road	Y	3,696	Y	3,696	Y	3,696	Y	3,696	Y	3,696
Total		**90,709**		**73,067**		**87,337**		**72,072**		**54,430**

Table 4-46 Comparison of Alternatives Incorporation of Existing Paved and Unpaved Roads

Road Type	Alternative									
	8		14		15		17		19	
	Feet	Miles	Feet	Miles	Feet	Miles	Feet	Miles	Feet	Miles
Paved	77,276	14.7	65,976	12.5	65,976	12.5	20,596	3.9	9,296	1.8
Unpaved	13,433	2.5	7,091	1.3	21,361	4.0	51,476	9.8	45,134	8.5
Total	**90,709**	**17.2**	**73,067**	**13.8**	**87,337**	**16.5**	**72,072**	**13.7**	**54,430**	**10.3**

Alternative 19 makes least use of existing roads but incorporates the second greatest amount of unpaved roads. Alternative 8 incorporates the most existing roads and the most paved roads, but the second least unpaved roads. Alternative 14 utilizes the least unpaved roads and is third in total use of existing roads. Alternative 17 would convert the most unpaved road (almost 10 miles) to paved road of all the alternatives. Alternative 15 incorporates the second most miles of total existing roads.

All Build Alternatives provide a collection and treatment system designed to meet water quality standards for the receiving water bodies. For a rural roadway, these facilities typically include grass ditches/swales to carry stormwater to treatment ponds for settling and storage prior to discharge, if discharge is to occur. For an urban

roadway, stormwater would be collected with the curb and gutter and transported via a closed drainage system to stormwater ponds for treatment prior to discharge, if discharge is to occur.

The proposed stormwater facility design will include, at a minimum, the water quantity requirements for water quality impacts as required by the NWFWMD in Rule 40A-1, 40A-4, 62-4, 62-341, 62-346, the FDEP Rules 62-312 and 62-25 F.A.C., and the rules of the USEPA. Therefore, no further mitigation for water quality impacts will be needed.

FDOT will address the potential effects of construction activities on water quality and wetlands in accordance with FDOT's most current edition of *Standard Specifications for Road and Bridge Construction* and through the use of BMP. The Engineer may require the use of additional erosion and sedimentation control features or methods not specified in the plans to address unanticipated conditions.

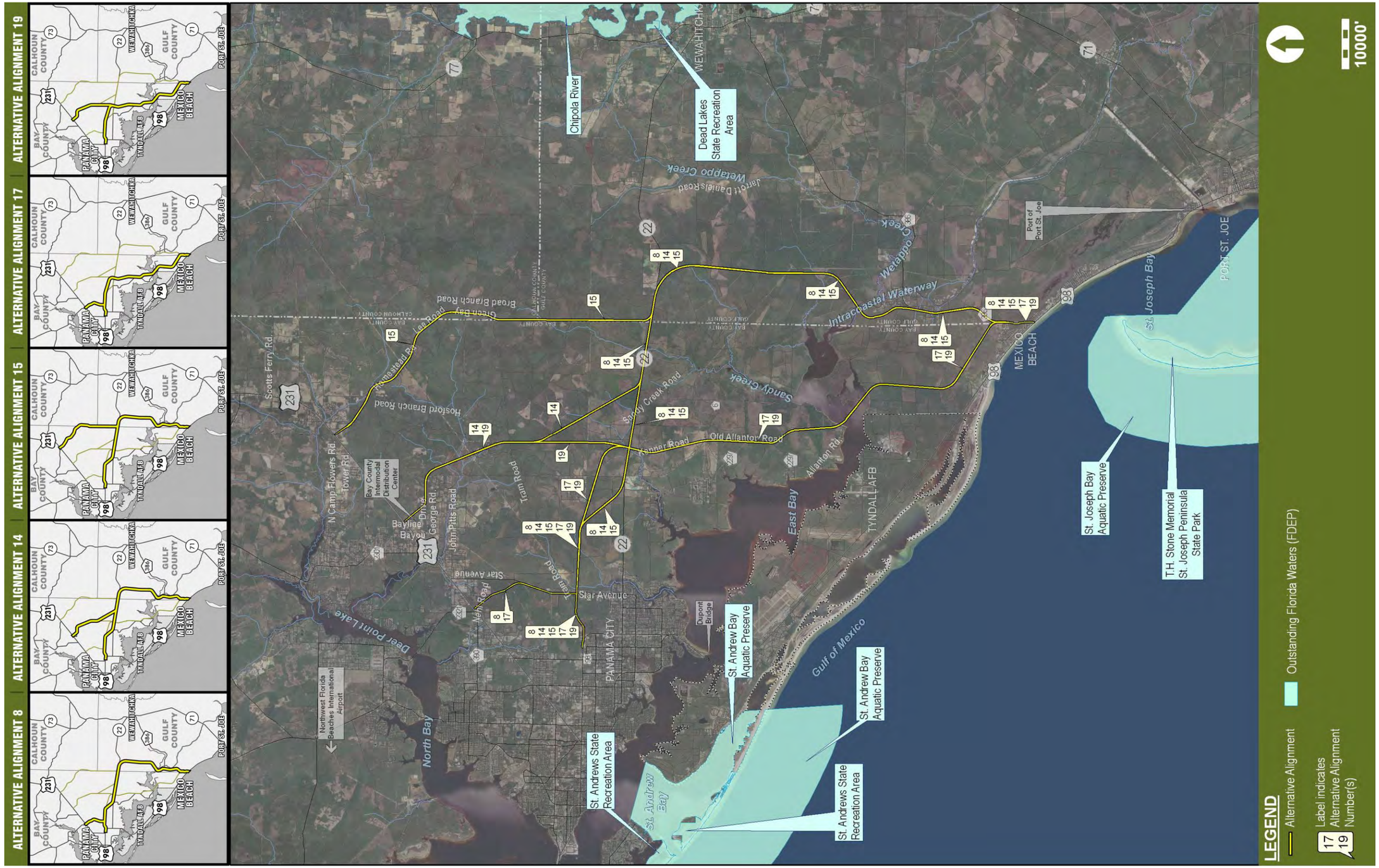
A Water Quality Impact Evaluation (WQIE) Checklist has been completed for the proposed project and is included in **Appendix F**. Please refer to the WQIE Checklist for additional information.

4.3.8 Outstanding Florida Waters

OFW are surface waters, such as rivers, lakes, and other water bodies, that have been designated by the FDEP as worthy of special protection because of their natural attributes. Under Chapter 62-302.700 FAC no degradation of water quality, other than that allowed in Rule 62-4.242(2) and (3), FAC, is to be permitted in OFW.

Four OFW are present near the project study area: St. Andrews State Recreation Area in Bay County, and T.H. Stone Memorial St. Joseph Peninsula State Park, the Chipola River and the Dead Lakes Recreation Area in Gulf County. None of the Gulf Coast Parkway Build Alternatives has direct involvement with any of these OFW (**Figure 4-28**).

Figure 4-28: OFW in the Vicinity of the Gulf Coast Parkway Study Area



4.3.9 Contamination

After ETAT review of the project in the EST, the USEPA responded with the following comment concerning contamination (comment and response presented in Appendix I):

- *Verify all underground tanks and investigate possible undocumented sites.*

This comment is addressed in summary form in Section 3.6.11 and in the section below, as follows:

In accordance with the FDOT policy and FHWA requirements, a contamination screening evaluation has been performed to determine the risk of the project alternatives having involvement with potentially-contaminated sites. A *Contamination Screening Evaluation Report*[51] prepared pursuant to the FHWA's Technical Advisory T6640A and FDOT's *PD&E Manual*[52], Part 2, Chapter 22, documents the identification and evaluation of potential contamination sites within the Gulf Coast Parkway study area.

The initial investigation for potential contamination sites was conducted for the original eighteen corridors. Twenty-seven (27) potential contamination sites (**Figure 3-23**) were identified through a search of regulatory agency databases, review of historical aerial photographs, and on-site field reviews. Utilizing FDOT's risk ranking system, each potential contamination site was assigned a level of risk based on the risk of the project alternatives having involvement with the site and the site's potential for the presence of contamination.

After the identification of the alternatives for further study, the number of possible sites with contamination having potential for involvement with the project was reduced to nineteen (19). The 19 potential contamination sites were reevaluated for involvement with the project alternatives. Any potential contamination site that fell within 500 feet of the proposed alternatives was included in the evaluation in the event groundwater contamination was present, as a groundwater contamination plume has the potential to migrate into the proposed right-of-way. Seven of the 19 previously-identified sites were found to be located within 500 feet of one or more of the project alternatives (**Figure 4-29**). Of the seven sites, one site (Hancock's Cut-Off) was a Medium Risk site and six sites were Low Risk sites. **Table 4-47** presents the sites with the risk rankings assigned to each site. **Table 4-48** shows those sites with which the alternatives have the potential to be involved.

All Build Alternatives have involvement with potentially contaminated sites. Alternative 8 and Alternative 17 have the potential for involvement with five sites. Alternatives 14, 15, and 19 have potential involvement with three sites. The No Build Alternative would not have involvement with any of the potential contamination sites.

The sites with which all Build Alternatives have the potential for involvement are Jerry Pybus Electric, Inc. and Ace Hardware, both Low Risk sites. Jerry Pybus Electric, Inc. has one (1) 8,000 gallon AST (AST). Although this site has no reported discharges, it was assigned a low risk ranking based on its being within 500 feet of the project alternatives. Ace Hardware, also located within 500 feet of the project alternatives, sells, stores, and mixes paint and other oil based products. The field inspection also revealed the presence of an AST, containing chlorine.

Alternatives 8 and 17 are the only alternatives with the potential for involvement with Tom Thumb #133 and Hancock's Cutoff, a Medium Risk site. Tom Thumb #133 is a gas retail station located west of the intersection of Nehi Road and US 231 on CR 390. It has been assigned a LOW RISK ranking as it is adjacent to terminus of Alternatives 8 and 17, although no evidence of contamination problems has been found. Hancock's Cut-off, also a gas retail station, is west of the center line of Nehi Road and US 231. There were two separate discharges on 3/24/94 and 12/1/95. As of March 4, 2010, the clean-up work was satisfactorily completed, including removal of seven (7) Underground Storage Tanks (UST) removed. Two 1200 gallon UST, installed in December 2007, are in service. Although the site has been remediated, it has been given a Medium Risk ranking due to the potential for low levels of contamination to remain on site and its location of less than 500 feet from Alternatives 8 and 17.

Figure 4-29: Potentially Contaminated Sites within the Vicinity of the Gulf Coast Parkway Alternatives

Table 4-47: Risk Rankings of Potentially Contaminated Sites in the Vicinity of the Gulf Coast Parkway Study Alternatives

Map ID	Parcel Name	Facility ID Number	Contamination Concern	UST Count	Above Ground Storage Tank (AST) Count	Facility Type	Facility Status	Risk Ranking	Alternative Involvement
5	Tom Thumb #133 4729 Hwy 231 Panama City, FL 32404	003798647	Gas/Diesel	1	0	Retail Station	Open	Low	**8 and 17**
6	Hancock's Cutoff 4808 CR 390 Panama City, Fl 32404	8626479	Gas/Diesel	1	0	Retail Station	Open	Medium	**8 and 17**
11	Jerry Pybus Electric, Inc. 1327 N Tyndall Pkwy Panama City, FL 32404	9803736	Gas	0	1	Fuel user/ Non-retail	Open	Low	**8, 14, 15, 17, and 19**
12	Ace Hardware 3911 15th Street Panama City, Fl 32404	None	Chlorine/Paint	0	1	Retail	Open	Low	**8, 14, 15, 17, and 19**
15	Break Away Hauling 191 Guilford Drive #05 Port St. Joe, Fl 32456	9807127 / 100276406	Diesel	0	2	Fuel user/ Non-retail	Open	Low	**8, 14, and 15**
17	Panama City Properties Old Allanton Road and Apaloosa Way Panama City, Fl 32404	9700073	Unknown	1	1	Fuel user/ Non-retail	NA	Low	17 and 19

Table 4-48: Gulf Coast Parkway Build Alternatives' Involvement with Potential Contamination Sites

Map ID	Potential Contamination Sites	Alternatives				
		8	14	15	17	19
5	Tom Thumb #133 4729 Hwy 231 Panama City, FL 32404	X			X	
6	Hancock's Cutoff 4808 CR 390 Panama City, Fl 32404	X			X	
11	Jerry Pybus Electric, Inc. 1327 N Tyndall Pkwy Panama City, FL 32404	X	X	X	X	X
12	Ace Hardware 191 Guilford Drive #05 Port St. Joe, Fl 32456	X	X	X	X	X
15	Break Away Hauling 191 Guilford Drive #05 Port St. Joe, Fl 32456	X	X	X		
17	Panama City Properties Old Allanton Road and Apaloosa Way Panama City, Fl 32404				X	X

Alternatives 8, 14, and 15 have the potential for involvement with one (1) Low Risk site, Break Away Hauling. Break Away Hauling has two (2) 800 gallon vehicular diesel AST that were installed in 2005. No spills were documented on FDEP's OCULUS website however several operational issues were not in compliance as of December 2007. Therefore, this site, which is within 500 feet of Alternatives 8, 14, and 15, received a Low Risk ranking.

Alternatives 17 and 19 would have involvement with Panama City Properties, which is known to have had both an AST and a below ground storage tank, but no other information regarding the status of these tanks was available. Since this site is adjacent to Alternatives 17 and 19 it was assigned a Low Risk ranking.

The State of Florida has evaluated the proposed right-of-way and has identified potentially contaminated sites for the various proposed alternatives. Sites having medium or high risk of contamination concerns will be re-evaluated prior to construction. If required, a Level 2 investigation will be performed to verify the type and extent of contamination present. Based on the findings of the updated file review and/or Level 2 investigation, the design engineers may be instructed to avoid the area(s) of concern or to include Special Provisions with the design plans. Actual cleanup will take place prior to construction, if feasible. Procedures specifying the contractor's responsibilities in regard to encountering petroleum contaminated soil and/or groundwater are set forth in the FDOT *Standard Specifications for Road and Bridge Construction*. Resolution of problems associated with contamination will be coordinated with appropriate regulatory agencies and, prior to right-of-way acquisition, appropriate action will be taken, prior to construction.

4.3.10 Wild and Scenic Rivers

In accordance with *Part 2, Chapter 23* of the FDOT *PD&E Manual*[53], an assessment of the potential for this project's involvement with Wild and Scenic Rivers was conducted. Following the Wild and Scenic Rivers Assessment process promulgated by Presidential Directive, it has been noted that the Northwest Fork of the Loxahatchee River and the Wekiva River, neither of which are located in Bay and Gulf Counties, are the only rivers in Florida presently designated as Wild and Scenic Rivers in the National Park Service Nationwide Rivers Inventory. In addition, the Myakka River, in Sarasota County, is designated a Wild and Scenic River under the Myakka River Wild and Scenic Designation and Preservation Act. The project alternatives cross the ICWW and

several streams in the project area, none of which are listed in the National Park Service Nationwide Rivers Inventory or the Florida Scenic and Wild Rivers Program; therefore, the coordination requirement for the Wild and Scenic Rivers Act does not apply to this project.

4.3.11 Floodplains

After ETAT review of the project in the EST, the USEPA and the NWFWMD responded with the following comments concerning floodplains (comments and responses presented in Appendix I):

- *USEPA – Additional technical data and definitions of bridging assumptions, as well as preliminary assumptions for culverts, should be provided.*
- *NWFWMD – Efforts should be made to protect floodplain resources and functions.*

A separate Location Hydraulics Report and Preliminary Engineering Report containing most of the requested information have been prepared for this project. These comments are addressed in the section below, as follows:

All Build Alternatives have transverse crossings of the floodplains. As is evident from Figure 3-14, there is no practical way to avoid these transverse encroachments. There are FEMA–mapped floodplains, and un-mapped floodplains associated with small hydraulic crossings. Preliminary evaluations have been performed to estimate the structure size for the floodplains having larger watersheds. For these floodplains and those with smaller watersheds, the hydraulic structures will be sized during design to meet FDOT's drainage standards and minimize the impacts to floodplains. For more information see the *Location Hydraulic Report*[47] prepared for this project.

Of the Build Alternatives evaluated for this project, only short sections are along existing roadways. Approximately 7.3 miles of SR 22 and 6.5 miles of CR 386 are within the Build Alternatives. Appropriate maintenance personnel were contacted to determine if there are hydraulic inadequacies with existing structures in those existing roads that are part of the Build Alternatives. Email correspondence with Mr. Harvey Brewton, FDOT Maintenance Engineer, Panama City, indicated that Sandy Creek Bridge on SR 22 has experienced flooding and may need more hydraulic capacity.

Two longitudinal encroachments were identified based on overlay of the Build Alternatives on United States Geological Survey (USGS) quadrangle maps. In these areas, it is proposed that bridges be used to span the encroachments. These longitudinal encroachments are noted below in **Table 4-49**. During design, when field survey is available and detailed hydraulic evaluations are done, it may be determined that these are not encroachments.

Table 4-49: Gulf Coast Parkway Longitudinal Encroachments

Alternative	Water Body	Approx Length of Longitudinal Encroachment (ft)
8, 14, 15, 17 and 19	Tributary of Callaway Creek	1,000
15	Tributary of Sandy Creek	4,500

The estimated number of transverse and longitudinal encroachments varies from 21 for Alternative 17 to 53 encroachments for Alternatives 14 and 15. Alternatives 8 and 19 have 42 and 31 encroachments, respectively.

A Federal Emergency Management Act (FEMA) designated "Regulatory Floodway" is the channel of a river or other watercourse and the adjacent land that must be reserved in order to discharge the base flood without increasing the water surface elevation more than a designated height. Development in these floodways must be regulated to ensure that there is no increase in upstream flood elevations.

Along this project, parts of Bayou George Creek and Callaway Creek are designated FEMA floodways. Some of the proposed alignments are near Bayou George Creek floodway but never cross it. A small portion of the project crosses the Callaway Creek floodway. The floodway is approximately 250-feet wide at the crossing. The detailed hydraulics for this crossing will be evaluated during the design phase when topographic survey is obtained. At that time, FEMA No-Rise procedures will be followed including proper coordination with Bay County staff. The procedures require using water-surface profile computer modles to ensure that no water surface increase is created by the proposed bridge and embankment. Given a no-rise situation, Floodway Map or Flood Insurance Study revisions will not be required.

Proposed cross drains will be designed to pass the 50-year flow without overtopping the roadway. Flows up to and including the 500-year will be analyzed to determine backwater and cross drains will be designed so that there is no significant change in land use values.

The project will promote transportation and associated economic development throughout the area. Some of this future development may occur within the base floodplains. Existing state and local regulations are in place to ensure that adverse effects of floodplain development are avoided; therefore, any future development will be compatible with local floodplain programs. As such, the project is a low risk for supporting incompatible floodplain development.

This type of project has the potential to cause changes in flood stage and flood limits; however, following FDOT's drainage standards, the proposed hydraulic structures and overall roadway drainage features will be designed to cause minimal if any changes to flood stages and flood limits in upstream and downstream properties, and to maintain the existing drainage patterns to the fullest extent practical. Potential water quality impacts will be minimal due to adherence to the applicable state regulations. Potential direct impacts to natural features such as fish, plant and wildlife habitat will be mitigated through subsequent design phase permitting. The *Wetland Evaluation Report* addresses potential direct impacts further. Given that a) there will be minimal changes to flood stages; b) existing drainage patterns will be maintained to the fullest extent practical; c) water quality will be addressed by compliance with state regulations; and d) direct impacts will be mitigated during the design phase; the project will have minimal impacts to natural and beneficial floodplain values.

Bay County and Gulf County representatives were contacted to determine if the project is consistent with existing watershed and floodplain management programs. Both Bay and Gulf County staff indicated that they do not have more restrictive requirements than FEMA for infrastructure projects such as the proposed project. When it was explained that the project will be designed to FEMA, FDOT, and state regulatory requirements, it was concluded that the project will be consistent with local floodplain management programs. The county agencies are the delegated FEMA representatives for this project so there was no need to discuss further with FEMA.

This project will have a positive effect on emergency services and evacuation as it provides an alternative route to the local communities.

In summary, the hydraulic structures proposed along existing alignments will perform in a manner equal to or better than the existing structure and backwater elevations are not expected to increase. The hydraulic structures proposed along new alignments will be designed to cause minimal changes in flood stages and flood limits. These changes will not result in any significant adverse impacts on the natural and beneficial floodplain values or any significant changes in flood risk or damage. This project is a low risk for supporting incompatible floodplain development and the project will enhance emergency services and evacuations. Therefore, it has been determined that the encroachments associated with this project are not significant.

4.3.12 Coastal Zone Consistency

Section 307 of the Coastal Zone Management Act (CZMA) of 1972 allows the coastal states with federally-approved coastal management programs to review federal activities within or adjacent to their coastal zone to determine whether the federal activity complies with the enforceable policies included in the State's approved management program. The Florida Coastal Management Program (FCMP), approved on September 24, 1981, is the federally-approved coastal management program. The FCMP consists of a network of 24 FS administered by nine state agencies and the five water management districts. The State of Florida's review of federal activities for consistency with the CZMA is coordinated by the FDEP, which is the lead agency for the FCMP. FDEP uses the State Clearinghouse to facilitate the coordination process. Federal agencies and applicants submit proposed activities, in accordance with 15 CFR 930, which are then distributed to each FCMP member agency with a statutory interest in the activity. Comments provided by the reviewer are used to by FDEP to make a determination on behalf of the State of Florida regarding the proposed federal action's consistency with the policies included in the FCMP.

When the FDOT requests federal funding for a project, a determination of consistency with the FCMP is usually required prior to the allocation of federal funds for the project. This is accomplished through the Advance AN phase which is accomplished as part of the publication of the Programming Screen Notice. The finding of consistency is included in the *Final Programming Screen Summary Report*. If the project also requires a federal license or permit, a separate consistency review for federal licenses or permit applications may be required in accordance with 15 CFR 930, Subpart D and Section 380.23, FS Consistency review of projects which require permits from the USACE or the USCG, or a state Environmental Resource Permit (ERP) conducted during the state permit review. The issuance or denial of the state permit serves as the state's consistency decision.

In accordance with Section 307 of the CZMA and Chapter 15, CFR, Part 930, *Federal Consistency with Approved Coastal Management Programs*, this project was reviewed for Coastal Zone Consistency. As documented in the AN process, the Florida State Clearinghouse has determined that this project is consistent with the Florida Coastal Zone Management Plan (see **Appendix J**).

4.3.13 Coastal Barrier Resources

In accordance with the Federal Coastal Barrier Resources Act (CBRA) of 1982, the Coastal Barrier Improvement Act of 1990, the Florida CZMA, Part II, Chapter 380, FS and revisions to the Local Coastal Comprehensive Plan under Part II, Chapter 163, FS, CBRA Units within or adjacent to the study area have been identified and are discussed in **Section 3**. As shown in **Figure 4-30**, none of the proposed alternatives would have direct involvement with these resources.

Figure 4-30 Coastal Barrier Resource Units in the Vicinity of the Gulf Coast Parkway

4.3.14 Wildlife and Habitat

After ETAT review of the proposed project in the EST, the FFWCC and the USFWS responded with the following comments concerning wildlife and habitat (comments and responses presented in Appendix I):

- *FFWCC – An EIS is recommended to address issues of adverse effects to natural resources, the public interest, controversial aspects requiring high agency interaction, and potential for irreversible impacts to the environment including ICE. An interagency Environmental Advisory team is also recommended, as well as participation in the Scoping Process, to address riparian system protection, need for wildlife underpass structures, runoff, population and movement surveys, and PCC mitigation.*
- *USFWS – Impacts to protected species must be minimized or avoided, potentially through bridging, habitat acquisition/restoration, developmental balance, limited access, and growth management. In accordance with the Endangered Species Act, direct, indirect, and cumulative effects to species and habitat must be determined; this includes the red-cockaded woodpecker (RCW), flatwoods salamander, bald eagle, PCC, and protected and rare plants. Habitat fragmentation, habitat corridors, and wildlife crossings are also issues of concern, as are potential effects to migratory birds. Finally, lighting in coastal environments must be compliant with sea turtle protection.*

Those members of the ETAT, including the FFWCC, that commented on the project in ETDM were invited to serve as members of an interagency advisory team for the project. The FFWCC participated in the EIS Scoping Meeting and all advisory team meetings. Coordination with the advisory team on these issues, are documented in Section 8.2. In addition, the FFWCC along with the USFWS, the USACE, the USEPA, the FDEP, the FDCA (now Florida Department of Economic Opportunity {FDEO}), and the NWFWMD participated in an Agency Advisory Group that developed the procedure for the analysis of ICE.

Mitigation plans will be developed after a preferred alternative has been selected, and will be coordinated with the permitting agencies and local government, planning agencies, and land owners. Species impacts and study methodology are included in the Endangered Species Biological Assessment and addressed in the section below, as follows:

An *Endangered Species Biological Assessment Report*[54] has been completed for the Gulf Coast Parkway project consistent with the Wildlife and Habitat Action Plan (**Appendix L**). As discussed in the Wildlife and Habitat Action Plan, the ESBAR has addressed the Migratory Bird Treaty Act, the Marine Mammals Protection Act, and the Fish and Wildlife Conservation Act. In conducting this assessment, consultation with the USFWS and coordination with the FFWCC was initiated. If it becomes necessary, formal consultation under Section 7 of the Endangered Species Act will be conducted.

During the development of the ESBAR it was determined that the USFWS documents 122 listed species (57 animals and 65 plants) potentially occurring in Bay, Gulf, and Calhoun counties (refer to **Table 3-30** in Section 3 of this report). Upon further examination of individual species habitat requirements, current habitat conditions, and alignment locations, it became apparent that many of the 57 wildlife species identified in **Table 3-30** had a low likelihood of occurring within alternative alignments or their associated buffers. Therefore, surveys were limited to those species that could be reasonably expected to occur within or in the vicinity of alternatives. While the focus of desktop and field surveys was on federally-listed wildlife and plants, and state-listed wildlife species, project biologists were instructed to be cognizant of all 122 species.

Reconnaissance field surveys were initially conducted within the originally proposed corridors and alignments. Surveys took place at various times (spring, early summer, late summer) between April through October 2007 and April through October 2009. The 2009 surveys were conducted for Alternative Alignments 14 and 17, which were added to the list of proposed alignments after the 2007 survey timeframes. Throughout the timeframe of the seasonal surveys (2007 and 2009), design changes were made to the proposed corridors and eventually the

Alternative Alignments analyzed herein were established. Some of these changes to alignment placement were made, in part, to avoid areas determined to have a higher observed occurrence of listed species and/or suitable habitat. Additional seasonally-appropriate surveys may be warranted for the Preferred Alternative.

Listed wildlife and plant species observed by project biologists during field surveys within Alternatives (or associated buffers) are summarized in **Table 4-50**. Sixteen (16) listed species (one wildlife and 15 plant species) were observed by project biologists within Alternative boundaries and/or associated buffers. Three plant species (white-birds-in-a-nest, Godfrey's butterwort, and Florida skullcap) are all federally-threatened and all other species in **Table 4-50** are state-listed.

Table 4-50 Listed Species and Species Elements observed by Project Biologists within Build Alternatives or Associated 300-Foot Buffers

Scientific Name	Common Name	Listing Status	Element	Alternative									
				8		14		15		17		10	
				Align	Buffer	Align	Buffer	Align	Buffer	Align	Buffer	Align	Buffer
Asclepias viridula	Southern Milkweed	CE, ST	Individual Plants			1		1					
Drosera intermedia	Spoon-leaved Sundew	ST	Individual Plants		1	2	3		1	1		1	2
Hymenocallis henryae	Henry's Spiderlily	CE, SE	Individual Plants	1	1					1	1		
Macbridea alba	White birds-in-a-nest	FT, SE	Individual Plants	1		1		1					
Oxypolis filiformis greenmanii	Giant Water Drop-wort	SE	Individual Plants	2	3	2	3	2	3		2		2
Phoebanthus tenuifolius	Narrow-leaved Phoebanthus	ST	Individual Plants	1	1	1	1	1	1				
Physostegia godfreyi	Apalachicola Dragonhead	ST	Individual Plants	2		3		2					
Pinguicula ionantha	Godfrey's Butterwort	FT, SE	Individual Plants		1						1		
Pinguicula lutea	Yellow Butterwort	ST	Individual Plants	1						1			
Polygonella macrophylla	Large-leaved Jointweed	CE, ST	Individual Plants	1	1	1	1	1	1				
Sarracenia psittacina	Parrot Pitcher Plant	ST	Individual Plants	5	5	7	5	4	4	1	2		2
Sarracenia purpurea	Decumbent Pitcher Plant	ST	Individual Plants			2	2			1		1	1
Scutellaria floridana	Florida Skullcap	FT, SE	Individual Plants	1	1	1	1	1	1				
Stachydeoma graveolens	Mock Pennyroyal	SE	Individual Plants					1					
Ursa americanus floridanus	Florida Black Bear	CE, ST	Scat and Tree Scratch Marks						1	2		2	
Verbesina chapmanii	Chapman's Crownbeard	CE, ST	Individual Plants		1		1		1				
			Total	**15**	**15**	**21**	**17**	**14**	**13**	**7**	**6**	**4**	**7**

FT: federal threatened, SE: state endangered, ST: state threatened, CE: consideration encouraged

4.3.14.1 Determination of Effects

One hundred and twenty-two species were originally considered. Two additional state-listed plants were identified by project biologists during field surveys. A "DE" was conducted for a subset of these species, i.e., federally-listed and state-listed wildlife species, and federally-listed plant species. Determinations were based on several criteria including best available data and/or information stemming from direct field observations by project biologists, publically available occurrence data, desktop analyses, and published information regarding species distributions and habitat associations. A total of 48 species meeting the criteria above were considered and a DE was made for each species. No species under consideration were assigned a DE of "may affect, likely to adversely affect". It was determined that all five Alternatives would have "no effect" on 20 species (11 federally listed, 1 other federally-protected, and 8 state listed) and "may affect, but is not likely to adversely affect" 14 species (3 federally listed and 11 state listed). It was also determined that 14 species were split with respect to their potential involvement with Alternatives (10 federally listed and 4 state listed). For example it was determined that three Alternatives (8, 14, 15) would have "no effect" on the five sea turtle species under consideration while Alternatives 17 and 19 "may affect, but is not likely to adversely affect" the species'. These five turtle species along with the other eight species were ultimately assigned a "may affect, but is not likely to adversely affect" DE. For species having a designation other than "no effect", BMP and species-appropriate protection measures such as pre-construction training and worksite signage may be employed as appropriate (See Gulf Coast Parkway ESBAR for additional details). These species determinations have been sent to USFWS for concurrence and informal consultation has been initiated.

The FDOT has determined the project will have *"No Effect"* on the **American alligator/crocodile, Gopher Tortoise, Red-cockaded Woodpecker, Beach Mice (Choctawhatchee beach mouse and St. Andrew beach mouse), Mussels (fat threeridge, Chipola slabshell, purple bankclimber, shinyrayed pocketbook, Gulf moccasinshell, oval pigtoe),** and *"may affect, but is not likely to adversely affect"* the **Reticulated flatwoods salamander, Sea Turtles (loggerhead, green, leatherback, hawksbill, Kemps' ridley), Shorebirds (piping plover, Southeastern snowy plover, least tern, black skimmer, American oystercatcher), White birds-in-a-nest, Godfrey's Butterwort, Florida skullcap** . The Service does not have enough information at this time to provide concurrence or non-concurrence with the FDOT's determination (pursuant to section 7 of the Act, as described in 50 CFR § 402.14). The FDOT intends to request that the Service reinitiate consultation for the project's effects on **these species** after the public hearing and during preparation of the final NEPA document or, if necessary, the final design phase of the project, prior to permitting. The request to reinitiate consultation will be concurrent with development of the final National Environmental Policy Act (NEPA) document for the project, once all comments from appropriate Federal, state, and local agencies and the public have been received and evaluated. At this time the FDOT will provide the Service additional information on the project as requested, and the Service will work with the FDOT to minimize the project's impacts to **these species**. The Service's consultation on the project may not be concluded before the final NEPA document for the project is completed. In this case, FDOT in compliance with 23 CFR 771.133 and Section 7 of the Endangered Species Act, agrees not to begin construction on the project, or otherwise make any irreversible or irretrievable commitment of resources which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures which would not violate section 7(a)(2) of the Act, until consultation with the Service is completed and final approval for the project is granted from the FHWA. This constitutes a commitment by FDOT of reasonable assurance which will be stipulated in the Commitment and Recommendations Section of the final NEPA document for the project.

FISH

Gulf sturgeon

While the Gulf sturgeon's range borders the Gulf Coast Parkway study area along the Gulf of Mexico, no Critical Habitat has been designated within the Gulf Coast Parkway study area including the eastern-most portion of East

Bay. Florida Natural Areas Inventory (FNAI) data does not identify any documented occurrences within or proximal to the Gulf Coast Parkway study area. According to the FNAI report, matrix unit 7024 (1 square mile), which is located west of Alternative 15, has the "potential for Gulf sturgeon" since the matrix unit lies within the known or predicted range of the species (closest waterbody is a tributary to Bayou George Creek). Specific surveys for Gulf sturgeon were not conducted for this PD&E study. Based on the information reviewed in this study, on-site conditions, proposed actions, and a commitment to the implementation of the *Construction Special Provisions Gulf Sturgeon Protection Guidelines* during construction (**Appendix B of the ESBAR**), FDOT concludes that the subject project **may affect, but is not likely to adversely affect** the federally-threatened Gulf sturgeon. In a correspondence on May 18, 2011 USFWS could concur with this finding as long as the commitment to the *Construction Protection Provisions Sturgeon Protection Guidelines* is upheld. As such the FDOT has committed to implementing these provisions.

Shoal bass

Preferable shoal bass habitat consists of fast-moving shoal areas of rivers and larger tributaries. Distribution within Florida includes limestone shoal areas of the Chipola and Apalachicola Rivers. No element occurrence data provided by FNAI or field observation data indicated potential direct or indirect impacts to this species within Alternatives or associated buffers. None of the alternatives are associated with the Apalachicola River. In addition, the portion of Alternative 15 that straddles the western boundary of Calhoun County is outside the watershed boundary of the Chipola River. Based on the information reviewed in this study, on-site conditions, proposed actions, and the intent to limit wetland impacts to the greatest extent practicable, FDOT concludes that the subject project will have **no effect** on this state-listed species of special concern (SSC).

Bluenose shiner

Preferable bluenose shiner habitat consists of quiet backwaters and pools of blackwater streams and rivers, usually associated with thick vegetation. No element occurrence data provided by FNAI or field observation data indicated potential direct or indirect impacts to this species within alternatives or associated buffers. Although suitable habitat exists, since this species is highly mobile, potential impacts would be unlikely. As such, FDOT concludes that the subject project **may affect, but is not likely to adversely affect** this state-listed SSC.

AMPHIBIANS AND REPTILES

American alligator/crocodile

The Gulf Coast Parkway study area is outside the range of the American crocodile. Furthermore, no American alligators were observed during field surveys for threatened and endangered (T&E) species and wetlands. Given this information, the inherent mobility of this species, and the intent to limit wetland impacts to the greatest extent practicable, FDOT concludes that there will be **no effect** on the federally-threatened American alligator as a result of the subject project. In a correspondence on May 18, 2011 USFWS did not have a specific discussion on concurrence for this species and has stated that upon submittal of the Final EIS and the selection of a preferred alternative concurrence can be provided. Since concurrence for this federal species has not yet been issued the project will follow the Reasonable Assurance process as discussed and committed to on page 4-133.

Reticulated flatwoods salamander (RFS)

On February 10, 2009, the USFWS issued a final rule changing the classification of flatwoods salamander from one to two: the RFS (*Ambystoma bishopi*), found only west of the Apalachicola River, and the frosted flatwoods salamander (*Ambystoma cingulatum*), found only east of the Apalachicola River. In addition, the rule designated the RFS as endangered and identified ten units of Critical Habitat encompassing approximately 7,496 acres. No critical habitat was designated in Bay or Gulf Counties and three critical habitat units were proposed for Calhoun

County. However, none of these critical habitat units are associated with the project study area. The closest critical habitat area (RFS-9; Subunit A) is located approximately six mile east of the northeastern leg of Alternative 15 in Calhoun County.

A desktop habitat evaluation modeled after the analysis used by HDR (2001) was conducted to identify potentially suitable flatwoods salamander breeding pond habitat. GIS was primarily utilized to conduct desktop analyses across all five Alternative Alignments and their associated buffers. Specific data layers employed in the analyses included photo-interpreted wetlands and FLUCFCS maps. The following FLUCFCS types occurring in the study area were identified as potentially suitable for RFS breeding ponds provided that they were isolated: 620, 621, 630, and 690. Wetland types such as salt marshes (FLUCFCS 642) were considered unsuitable. Photo-interpreted wetlands and potential RFS FLUCFCS habitats were intersected and the resultant polygons were considered. Finally, the polygons resulting from the intersection were reviewed in conjunction with 1953 and 2004 aerial photography to identify isolated, wetland depressional areas of 10 acres or less. Additional photo-interpretation was conducted to classify the type of potential breeding habitat identified (cypress dome, isolated ponds, etc.) and to review the surrounding habitat type, as well as to identify any similar wetland features in the general vicinity.

Alternatives 8, 14, and 15 had the highest number of potential ponds (11) within the alignment footprint and Alternatives 17 (1) and 19 (2) had the lowest. With respect to potential indirect involvement (potential breeding ponds located within 1,500 feet of alternatives), Alternative 15 (17 ponds) and Alternative 14 (16) had the highest and Alternative 17 (4) and Alternative 19 (7) had the lowest.

No specific field surveys were conducted with respect to scoring or grading potential RFS habitat. However, it was generally observed during limited field reconnaissance surveys for wetlands and other listed species surveys that overall RFS habitat conditions (vegetation structure and composition of the pond environment, ecotone, and surrounding uplands) were of low quality. The majority of alternative area associated with this project is in Bay County. No RFS critical habitat has been designated in Bay or Gulf Counties and no known occupied or appropriate unoccupied habitat is located within an appropriate dispersal distance of a known population to allow for natural recolonization of RFS in Bay County (Federal Register {FR} 2009). Given the number of corridors and alignments considered and assessed for this project, along with the length of each typical alternative, e.g. $\pm$ 30 miles, RFS assessments using the HDR Method were limited to Phase I for all potential ponds within 1,500 feet of said alternatives. In light of this, FDOT agrees to conduct a Phase II RFS field evaluation (per the HDR Method) for a representative sample of potential ponds within 1,500 feet of the preferred alternative during design and permitting. A re-assessment of the DE for the preferred alternative will be based on the results of the Phase II field evaluation and has been added as a commitment. Based on the data and information reviewed to date, FDOT concludes that the project **may affect, but is not likely to adversely affect** the federally-endangered RFS.

In a correspondence on May 18, 2011 USFWS recommended completing a Phase II field evaluation of all potential ponds once a preferred alternative is selected. Since concurrence for this federal species has not yet been issued the project will follow the Reasonable Assurance process as discussed and committed to on page 4-133.

Gopher Tortoise

Gopher tortoise and vegetation surveys indicate the potential for involvement with gopher tortoises across all Alternatives. Standard FFWCC gopher tortoise permitting guidelines will be implemented for the Preferred Alternative, e.g., surveys of an appropriate design will be required prior to any relocations. Given the low number of burrows found by biologists, relative gopher tortoise habitat conditions, and the flexible permitting through FFWCC associated with relocating potentially affected gopher tortoises, FDOT concludes that this project will have **no effect** on the state-listed gopher tortoise.

In a correspondence on May 18, 2011 USFWS did not have a specific discussion on concurrence for this species and has stated that upon submittal of the Final EIS and the selection of a preferred alternative concurrence can be provided. Since concurrence for this federal species has not yet been issued the project will follow the Reasonable Assurance process as discussed and committed to on page 4-133.

Eastern Indigo Snake

Potential indigo snake habitat (upland and wetland) was found within the Gulf Coast Parkway study area. No specific surveys were conducted for this species during this PD&E study and no individuals were observed during surveys for other species and/or during wetlands evaluations. The low number of gopher tortoise burrows found within the study area is also noteworthy given indigo snake usage of gopher tortoise burrows. But because the Eastern indigo snake utilizes a wide variety of habitats, including xeric sandhills through riparian thickets which are found in the study area there is potential for occurrence. With implementation of the *Standard Protection Measures for the Eastern Indigo Snake* during construction, FDOT concludes that the subject project **may affect, but is not likely to adversely affect** the federally-threatened eastern indigo snake.

In a correspondence on May 18, 2011 USFWS could concur with this finding as long as the commitment to incorporate the *Standard Protection Measures for the Eastern Indigo Snake* during construction is upheld. As such FDOT has committed to incorporate these measures.

Florida Pine Snake

No specific surveys were conducted for Florida pine snake and no occurrences were recorded during general reconnaissance surveys and surveys for gopher tortoises. Due to the relationship this species has with the gopher tortoise (use of its burrows) and habitat conditions within the Gulf Coast Parkway study area, FDOT concludes that this project will have **no effect** on this state-SSC. Per FFWCC guidelines, all commensal species (such as the Florida pine snake) captured during potential gopher tortoise relocation efforts will be relocated to a certified, long-term gopher tortoise recipient site.

Gopher frog

Gopher frog habitat is found within the Gulf Coast Parkway study area. No specific surveys were conducted for this species during this PD&E study. No gopher frogs were observed during general reconnaissance surveys and surveys for gopher tortoises. Due to the relationship this species has with gopher tortoise (use of its burrows) and habitat conditions within the Gulf Coast Parkway study area, FDOT concludes that this project will have **no effect** on this state-designated SSC. Per FFWCC guidelines, all commensal species (such as the gopher frog) captured during potential gopher tortoise relocation efforts will be relocated to a certified, long-term gopher tortoise recipient site.

Sea Turtles (loggerhead, green, leatherback, hawksbill, Kemps' ridley)

Given that the proposed southern termini for all Alternatives are located north of US 98 and no impacts are anticipated south of this road (beach side), no impacts to the five (5) federally-listed sea turtles or their specific nesting habitat is expected. There is a possibility for involvement with some or all of these sea turtles with respect to the potential bridging of East Bay associated with Alternatives 17/19. Given that this would not involve nesting habitat, the relative mobility of these species, and the potential for juvenile sea turtles to occasionally utilize bays and estuaries, any impacts would be unlikely. Potential effects of the project on these sea turtles in-water will be coordinated with National Oceanic Atmospheric Administration (NOAA). A commitment to work with USFWS on a wildlife-friendly lighting plan is included in the Conservation Measures and Commitments section below. Since a preferred alternative has yet to be selected, FDOT concludes that the subject project **may affect, but is not likely to adversely affect** these federally-listed sea turtles. Since concurrence for this federal

species has not yet been issued the project will follow the Reasonable Assurance process as discussed and committed to on page 4-133.

Freshwater Turtles (Barbour's map turtle, alligator snapping turtle, Suwannee cooter)

These three freshwater turtles generally prefer habitat consisting of rivers, large streams, and canals. They tend to build nests on high banks, berms, and sandbars above the floodplain. Specific surveys for these species were not conducted and no individuals were observed during field surveys. No element occurrences were identified by FNAI within alternatives' boundaries or buffers. The relatively high number of small, freshwater streams associated with the alternatives suggests that involvement with these species is unlikely. Minimizing impacts to wetlands along with the relative mobility of these species should reduce potential impacts to these species. Based on these factors, FDOT concludes that the subject project **may affect, but is not likely to adversely affect** any of these state-SSC.

BIRDS

Red-cockaded woodpecker

RCW habitat evaluations were centered on aerial photo interpretation of known populations and their proximity to Alternative Alignments. Habitat conditions proximal to known RCW populations were noted during field surveys for wetlands and other listed species. Specific field surveys for RCWs or cavity trees were not conducted.

Two RCW populations are associated with the Gulf Coast Parkway study area. Lathrop Bayou Management Area (LBMA) is being protected and enhanced by Bureau of Land Management (BLM) and The St. Joe Company where a small population of RCWs is located on Raffield Island. LBMA is located at the east end of East Bay, between two Gulf Coast Parkway Alternative Alignments (17/19 and 8/14/15) and includes 539 acres of late-successional, longleaf pine flatwoods. Approximately 22 cavity trees have been identified in a cluster on Raffield Island with a total of five birds banded as of December 2002. Alternative Alignments 17/19 are located approximately 6,000' west of the LBMA RCW cluster. The Wetappo Creek Conservation Area (WCCA) is located on St. Joe property in north Gulf County, just west of Wewahitchka, off of SR 22. WCCA comprises approximately 1,500 acres of late-successional longleaf pine habitat and currently supports eight RCW clusters (population goal of 10 active clusters) (St. Joe 2007). Alternative Alignments 8/14/15 are located approximately 1 mile (5,280') west of the WCCA. The LBMA and WCCA RCW populations are threatened by small numbers of birds and genetic isolation. Plans to translocate birds from other RCW populations to improve genetic diversity in both populations are included in the overall management plan for both properties (United States Department of Interior {USDOI}, 2003). Publically-available data does not indicate the presence of any other RCW groups other than the Wetappo Creek and Lathrop Bayou clusters.

In addition to these two RCW populations, two documented historic RCW cavity trees/clusters (circa 1980) were identified by FNAI along SR 22 in Gulf County in the vicinity of Oliver's Creek near the junction of Alternative Alignments 17/19 and 8/14/15. Limited reconnaissance along this section of SR 22 along with desktop analyses indicated that these cavity trees are no longer present as the habitat is dominated by various planted pine stands approximately 10-25 years old.

RCW habitat typically consists of contiguous stands of longleaf, loblolly, slash, and or pond pine ranging in age between 30-120 years old. Younger stands provide foraging habitat while older stands serve as potential sources of cavity trees. RCW clusters (aggregation of cavity trees) generally comprise about 10 acres. Associated foraging habitat to support RCW groups is contained within an adjacent area extending to 0.5 mile with most foraging habitat preferably found within 0.25 mile of the cluster (USFWS 2003). Extensive forested tracts characterized by planted pine stands dominate the landscape adjacent to the WCCA. LBMA is surrounded by East Bay on three sides and is adjacent to planted pine stands similar to those described above along its

southeastern border. These planted pine stands are generally 10-25 years old and are overburdened with midstory shrubs which, results in a vegetation structure unfavorable to RCWs. Alternative Alignments are located well beyond the 0.5-mile RCW foraging territory boundary.

The USFWS has expressed concerns about the potential for the Gulf Coast Parkway to fragment habitat that separates these two RCW populations. The St. Joe Company has a Memorandum of Understanding (MOU) with BLM that addresses the management of both RCW populations. Nothing in the MOU indicates that these two populations are "connected". In fact, the Lathrop Bayou and Wetappo Creek RCW populations are located approximately eight miles (8) from each other. None of the alternatives would have an effect on the management of either RCW nesting and/or foraging habitat for both the Wetappo Creek or Lathrop Bayou RCW populations. In addition, the land between these two populations is predominantly forested (planted pine 10-25 years old) and primarily, if not entirely, privately owned. While private landowners may chose to manage their land to benefit listed species, e.g., RCWs, they are not required to do so. Based on habitat conditions in the study area and biological requirements of the species, i.e., foraging territories extend out 0.5 mile from a cluster, potential direct or other effects related to "fragmentation" are not anticipated.

FDOT submits that an adequate assessment of the habitat conditions associated with alternative alignments and the overall habitat context of the study area has been conducted. In light of these findings, FDOT concludes that the subject project will have **no effect** on the federally-endangered RCW. Since concurrence for this federal species has not yet been issued the project will follow the Reasonable Assurance process as discussed and committed to on page 4-133.

Wood stork

Specific surveys for wood storks were not conducted as a part of this PD&E study. No wood storks were observed by field crews while conducting wetland assessments and listed-species surveys. Although there is potential wood stork habitat within the Gulf Coast Parkway study area, there is no documented core foraging area located within the Gulf Coast Parkway study area. In fact, the nearest wood stork core foraging area is located in Leon County, Florida approximately 50 miles east of the Gulf Coast Parkway study area. Based on this, FDOT concludes that the subject project will have **no effect** on the federally-endangered wood stork.

In a correspondence on May 18, 2011 USFWS stated that they could concur with a determination that the proposed alternatives may affect, but are not likely to adversely affect the wood stork. The District agrees with this change and revises its conclusion to may affect, but are not likely to adversely affect the wood stork.

Bald eagle

The wetland areas around East Bay meet the food, cover, reproductive and habitat requirements of the bald eagle. Specific field surveys were not conducted for bald eagle nests. FFWCC was consulted to determine if active bald eagle nesting sites are located within the study area. One active nest was identified within less than a mile of the study area - LBMA on Big Pine Island.

This nest is located in Section 22, Township 05S, Range 12W (latitude 30.0283 and longitude -85.434). Bald eagles have utilized this nest since 1991 and it was last surveyed as active in 2006. This is one of the oldest active nests in Bay County and is located approximately 3,000 feet from Alternative Alignments 17/19. The LBMA is being protected and enhanced for wildlife under a Management Plan developed by the BLM, Department of the Interior. A documented inactive nest is located west of Allanton Point (latitude 30.036 and longitude -85.483) approximately 8,200 feet west of Alternative Alignments 17/19. This nest was last active in 2003. Another documented inactive bald eagle nest is located adjacent to East Bay County Line Road, just east of Sandy Creek. This nest is located in Section 03, Township 05S, Range 12W (latitude 30.0715 and longitude -85.4169) approximately 14,000 feet east of Alternative Alignments 17/19. This eagle nest was last active in 2004.

The proposed project has suitable habitat for bald eagles. There is one (1) active bald eagle nest within one mile (approximately 3,000 feet) of Alternative Alignments 17/19. Due to this nest being well beyond the primary management zone established for bald eagle nests (660 feet), FDOT concludes that the subject project will have **no effect** on the bald eagle. In the event that a bald eagle constructs a nest near the Recommended Alignment prior to or during construction activities, National Bald Eagle Management Guidelines will be followed.

Arctic Peregrine Falcon

Peregrine falcons rely on a constant and plentiful abundance of birds, their primary food source. This species usually requires open spaces for hunting. Common habitats where peregrines have been documented include coastal and barrier island shorelines, river margins, sloughs, marshes, and in urban areas with adequate prey. No falcons were observed during field surveys and FNAI does not identify any nest locations within Alternative Alignment boundaries or buffers. Impacts to this species are not expected based on these factors and the mobility of this species. Therefore, FDOT concludes that the subject project will have **no effect** on this state-endangered bird.

Marian's marsh wren

No specific surveys were conducted for this species and no individuals were observed during field surveys for wetlands and other listed species. No element occurrences were reported by FNAI within Alternative Alignment boundaries or buffers. Potential habitat for the Marian's marsh wren was observed with the study area. Based on these factors and the mobility of this species, involvement is not expected. Therefore, FDOT concludes that the subject project will have **no effect** on this state-SSC.

Florida sandhill crane

No specific surveys were conducted for this species and no individuals were observed during field surveys. No element occurrences were reported by FNAI within Alternative Alignment boundaries or buffers. In addition, the Florida sandhill crane is rarely seen west of Taylor County, Florida (FNAI 2001), which is approximately 100 miles east of the Gulf Coast Parkway study area. Based on these factors, involvement with this species is not expected. Therefore, FDOT concludes that the subject project will have **no effect** on this state-threatened species.

Southeastern American Kestrel

Kestrels nests during mid March through June, typically in abandoned woodpecker cavities or man-made cavities. Preferred kestrel habitat comprises sparsely-stocked canopies or overstories and low growing, open understories. This species feeds mainly on insects and lizards, although it occasionally consumes small rodents and birds. No individuals were observed during the field surveys and no nests were identified by FNAI within Alternative Alignment boundaries or buffers. Impacts to this species are not expected based on these factors and the mobility of this species. Therefore, FDOT concludes that the subject project will have **no effect** on this state-threatened bird.

Shorebirds (piping plover, Southeastern snowy plover, least tern, black skimmer, American oystercatcher)

Given that the proposed southern termini for all alternatives are located north of US 98 and no impacts are anticipated south of this road (beach side), no impacts to the federally-threatened piping plover, specific nesting habitat, or critical habitat are expected. Foraging habitat and possibly small areas of potential nesting habitat may be present in various shoreline locations associated with East Bay. As such, there is a possibility for involvement with some or all of these shorebirds with respect to the potential bridging of East Bay associated with Alternatives 17 and 19. Based on the published data reviewed, impacts to the shorebird species listed above are unlikely. Since a preferred alternative has yet to be selected, FDOT concludes that the subject project **may affect, but is**

not likely to adversely affect these bird species. Since concurrence for this federal species has not yet been issued the project will follow the Reasonable Assurance process as discussed and committed to on page 4-133.

Wading Birds (little blue heron, tricolored heron, and snowy egret)

Suitable habitat for these three (3) State SSC is found in various locations across the Gulf Coast Parkway study area. None of these highly mobile species were observed during any field surveys. Based on the published data reviewed, impacts to these wading bird species are unlikely. Therefore, FDOT concludes that the subject project **may affect, but is not likely to adversely affect** any of these bird species.

Water Birds (limpkin, brown pelican)

Suitable habitat for these two (2) SSC is found in various locations across the Gulf Coast Parkway study area. None of these highly mobile species were observed during any field surveys. Based on the published data reviewed, impacts to these water bird species are unlikely. Therefore, FDOT concludes that the subject project **may affect, but is not likely to adversely affect** any of these bird species.

MAMMALS

Beach Mice (Choctawhatchee beach mouse and St. Andrew beach mouse)

Potential habitat for beach mice is located south of US 98. The proposed southern termini for all Alternative Alignments are located north of US 98. None of the Alternative Alignments (proposed right-of-way and associated 300-foot buffers) will involve beach mice, potential habitat, or critical habitat. While platted developments located with the study area contain potential beach mouse habitat, each has existing conservation plans to address potential impacts (See ICE Report in EIS). Therefore, FDOT concludes that the subject project will have **no effect** on either the federally-endangered Choctawhatchee beach mouse or the St. Andrew beach mouse. Since concurrence for this federal species has not yet been issued the project will follow the Reasonable Assurance process as discussed and committed to on page 4-133.

West Indian Manatee

Although unlikely, West Indian manatees could be impacted during construction of a potential bridge crossing of East Bay associated with Alternatives 17 and 19. Manatee protection measures and BMP will be employed throughout the construction phase should one of these be the preferred alternative. Based on these protection measures plus the relative mobility of this species, FDOT concludes that this project **may affect, but is not likely to adversely affect** this federally-endangered species.

In a correspondence on May 18, 2011 USFWS could concur with this finding as long as the commitment to incorporate the *Standard Manatee Conditions for In-water Work* for bridge construction is upheld. As such FDOT has committed to incorporate these standards.

Florida Black Bear

Florida black bear habitat (various forested wetland and upland communities) is found throughout the Gulf Coast Parkway study area. No specific surveys were conducted for this species during this PD&E study. Evidence of bear occurrence (individuals, tracks, scat, etc.) was observed across the Gulf Coast Parkway study area, within Alternative buffers, and within the boundaries of Alternatives 17 and 19. FFWCC has identified locations of known Florida black bear kills along Star Avenue, SR 22, CR 386, and along US 98 (SR 30) near the Tyndall AFB and Mexico Beach. As a result of these observations, adjustments were made to some of the Alternatives to reduce and minimize potential impacts to higher quality bear habitat. Future field surveys may be necessary to

further analyze the potential impact to Florida black bear and associated habitats for the preferred alternative. Increased vehicular traffic and habitat fragmentation will likely occur under any of the alternatives. Potential wildlife crossings and other mitigation measures will likely be necessary for the preferred alternative. Based on published data and observations by project biologists, FDOT concludes that the subject project **may affect, but not likely to adversely affect** the state-threatened Florida black bear.

INVERTEBRATES

Mussels (fat threeridge, Chipola slabshell, purple bankclimber, shinyrayed pocketbook, Gulf moccasinshell, oval pigtoe)

Six (6) freshwater mussel species potentially associated with the Gulf Coast Parkway study area are federally-protected. Five (5) of these mussel species have Critical Habitat that is relegated to portions of Gulf and Calhoun Counties that are outside the boundary of the Gulf Coast Parkway study area. Specific surveys for mussels were not conducted as a part of this PD&E study and no FNAI element occurrences are reported within alternative boundaries or buffers. Impacts to these species are not expected based on these factors. Given this, FDOT concludes that the subject project will have **no effect** on these federally-listed mussels. Since concurrence for this federal species has not yet been issued the project will follow the Reasonable Assurance process as discussed and committed to on page 4-133.

Panama City Crayfish

The PCC generally occupies wet flatwoods, however, individuals have been found in roadside ditches, swales, and powerline right-of-ways (FFWCC 2003). Common characteristics of these sites include little or no overstory vegetation, abundant grass or herbaceous groundcover, and seasonal inundation. Core soils include the Pamlico-Dorovan complex, Rutledge sand, Plummer sand, Pelham sand, Leefield sand, Leon fine sand, Osier fine sand, and Alapaha loamy sand (FFWCC 2007). The western portions of all five Alternative Alignments are located within the PCC's known range. A desktop analysis of potential involvement with PCC habitat was conducted by using GIS to examine PCC range and occurrence data (obtained from the FFWCC) and Natural Resource Conservation Service (NRCS) Soil Survey data in relation to Alternative Alignments. Documented occurrences (based on data sources above) were tallied per Alternative Alignment. To determine potential involvement with this species, core and secondary soils were also identified and quantified. Based on this desktop analysis, Alternative Alignments 14/15/19 potentially involve 15.3 acres of core soils and 21.1 acres of secondary soils. Alternative Alignments 8/17 potentially involve 46.2 acres and 72.8 acres of core and secondary soils, respectively (**Table 4-51**).

Table 4-51: PCC Core and Secondary Soils within Alternatives Alignments

PCC Core Soil Type	Acres within Alternative 14/15/19	Acres within Alternative 8 & 17
Pantego		3.9
Pelham sand		14.4
Plummer sand	4.4	14.4
Rutledge sand	10.9	13.5
Total	**15.3**	**46.2**
PCC Secondary Soil Type		
Albany	21.1	45.3
Leefield		27.5
Total	**21.1**	**72.8**
Grand Total Core & Secondary Soils	**36.4**	**119.0**

FNAI did not identify any PCC within the alignments of any alternative. Data from FFWCC identified 19 PCC occurrences within Alternatives 8 and 17 and two occurrences within Alternatives 14, 15, and 19. Project biologists observed crayfish burrows (species unknown) in roadside ditches adjacent to Star Avenue and Tram Road.

Based on desktop analyses, western portions of all five alternatives potentially involve approximately 15 to 46 acres of core PCC soils. PCC occurrence data provided by FFWCC indicated that all five Alternatives could potentially involve PCC. Coordination with FFWCC and site-specific surveys will likely be required to update and refine PCC occurrence data related to the preferred alternative. A management plan for the PCC (FFWCC 2007) is still a draft. According to the FFWCC website (accessed on October 16, 2012, http://myfwc.com/wildlifehabitats/imperiled/listing-process/), the draft management plan will be finalized by spring 2013. Any potential conservation measures for this state-listed species will be addressed by the project sponsor and FFWCC. Based on this information and the status of the species, FDOT concludes that this project **may affect, but is not likely to adversely affect** this state-SSC.

PLANTS

White birds-in-a-nest

One occurrence of this species was observed within Alternatives 8/14/15. Another occurrence was observed within an alternative that was later dropped from consideration. Given that a preferred alternative has not been selected, the limited number of occurrences and the potential to avoid the species entirely, FDOT concludes that the subject project **may affect, but is not likely to adversely affect** the federally-threatened white birds-in-a-nest. Since concurrence for this federal species has not yet been issued the project will follow the Reasonable Assurance process as discussed and committed to on page 4-133.

Godfrey's Butterwort

Three occurrences of this species were observed within the Gulf Coast Parkway study area. One occurrence was located beyond the buffer areas associated with the alternatives and one occurrence was located within buffers associated with Alternatives 8 and 17. Given that a preferred alternative has not been selected, the limited number of occurrences, and the potential to avoid this species entirely, FDOT concludes that the subject project **may affect, but is not likely to adversely affect** the federally-threatened Godfrey's butterwort. Since concurrence for this federal species has not yet been issued the project will follow the Reasonable Assurance process as discussed and committed to on page 4-133.

Florida skullcap

One occurrence was located within the buffer areas associated with Alternatives 8, 14, and 15 and the other occurrence was located within the right-of-way for Alternatives 8, 14, and 15. Given that a preferred alternative has not been selected, the limited number of occurrences, and the potential to avoid the species entirely, FDOT concludes that the subject project **may affect, but is not likely to adversely affect** the federally-endangered Florida skullcap. Since concurrence for this federal species has not yet been issued the project will follow the Reasonable Assurance process as discussed and committed to on page 4-133.

A summary of species' determinations of effect per alternative can be found in **Table 4-52**.

Table 4-52: Determination of Effect per Species Potentially Affected by Alternatives

Common Name	Listing Status*	FLUCFCS Type	Basis for DE	Alternative Alignment (DE)				
				8	14	15	17	19
Gulf sturgeon	FT	510, 541	Habitat + Database	NE**	NE	MANLAA***	MANLAA	MANLAA
Green turtle	FE	541	Habitat + Database	NE	NE	NE	MANLAA	MANLAA
Leatherback turtle	FE	541	Habitat + Database	NE	NE	NE	MANLAA	MANLAA
Hawksbill turtle	FE	541	Habitat + Database	NE	NE	NE	MANLAA	MANLAA
Kemp's ridley turtle	FE	541	Habitat + Database	NE	NE	NE	MANLAA	MANLAA
Loggerhead turtle	FT	541	Habitat + Database	NE	NE	NE	MANLAA	MANLAA
Piping plover	FT	642	Habitat + Database	NE	NE	NE	MANLAA	MANLAA
White bird's-in-a-nest	FT	814W, 817W, 832W	Observed (Individual Plants)	MANLAA	MANLAA	MANLAA	NE	NE
Godfrey's butterwort	FT	814W, 817W, 832W	Observed (Individual Plants)	MANLAA	NE	NE	MANLAA	NE
Florida skullcap	FT	814W, 817W, 832W	Observed (Individual Plants)	MANLAA	MANLAA	MANLAA	NE	NE
West Indian manatee	FE	510, 541	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Reticulated flatwoods salamander	FE	620, 621, 630, 640	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Indigo snake	FT	410, 434, 441, 443, 620, 630	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Southeastern snowy plover	ST	642	Habitat + Database	NE	NE	NE	MANLAA	MANLAA
Least tern	ST	642	Habitat + Database	NE	NE	NE	MANLAA	MANLAA
Black skimmer	SSC	642	Habitat + Database	NE	NE	NE	MANLAA	MANLAA
American oystercatcher	SSC	642	Habitat + Database	NE	NE	NE	MANLAA	MANLAA
Florida black bear	ST	441W, 614, 620, 621, 630, 814W, 817W, 832W	Observed (bear sign)	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Little blue heron	SSC	640, 641, 510, 524	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Tricolored heron	SSC	640, 641, 510, 524	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Snowy egret	SSC	640, 641, 510, 524	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Limpkin	SSC	640, 641, 510, 524, 630, 621	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Brown pelican	SSC	541, 642,	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Barbour's map turtle	SSC	510, 510D	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Alligator snapping turtle	SSC	510, 510D	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Suwannee cooter	SSC	510, 510D	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Panama City crayfish	SSC	641, 814W, 817W, 832W	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Bluenose shiner	SSC	510	Habitat + Database	MANLAA	MANLAA	MANLAA	MANLAA	MANLAA
Total MANLAA				17	16	17	26	25
Total Federal Species MANLAA				6	5	6	11	10

* FE=Federally Endangered, FT=Federally Threatened, FO=Federal Other, SE=State Endangered, ST=State Threatened, SSC=Species of Special Concern (state)
** NE: No Effect
*** MANLAA: May Affect, but is Not Likely to Adversely Affect

The ESBAR report has been submitted to USFWS, review comments have been received (see Appendix J), the report has been revised and is being resubmitted. USFWS concurrence with the findings of that report is pending.

Based on species observed by project biologists (**Table 4-50**), it is clear that all five Alternatives will likely have potential effects on listed species – mainly state-listed plants. While these field observations are informative, they were limited and opportunistic (governed by property access) and primarily serve to support the overall assessment of effects on species. A much wider array of species and habitat data were assessed in Section 8 of the ESBAR. Results of that analysis provide a more complete picture and indicate that, Alternatives 17 and 19 have the highest potential for effects on listed species while Alternatives 8, 14, and 15 have the lowest.

4.3.14.2 Potential Avoidance and Minimization Measures

Throughout the PD&E study, proactive measures such as conducting multiple habitat assessments (desktop and field) were used to avoid and/or minimize potential impacts to listed species. Every alignment currently under consideration was shifted/modified (where feasible) to varying degrees in order to avoid and/or minimize impacts to higher quality wetland and upland habitats that are more likely to harbor relatively high numbers of listed species. It is important to note that such "shifts and modifications" were also balanced against potential involvement with other resources such as wetlands and cultural resources. Furthermore, avoidance and minimization measures were also utilized in earlier stages of the PD&E process when additional corridors and alignments were dropped from consideration based upon potential resource impacts and public input.

4.3.14.3 Conservation Measures and Commitments

Proactive measures to avoid or minimize potential impacts to listed species and associated habitat have been identified in consultation with the agencies. Every alternative currently under consideration was shifted/modified to varying degrees in order to avoid and minimize impacts to listed species and their habitats. It is important to note that such "shifts and modifications" were also balanced against potential involvement with other resources such as wetlands and cultural resources. Furthermore, avoidance and minimization measures were also utilized in earlier stages of the PD&E process when additional corridors and alternatives were dropped from consideration based upon potential resource impacts and public input. Specific minimization measures and commitments have been included in the ESBAR reviewed by the resource agencies. Any measures not included in the initial submittal of the ESBAR were added to the subsequent revision. The complete set of mitigation and/or protection measures identified for consideration include:

- Conducting pre-construction surveys at appropriate times for listed species to enhance assessments concerning location and population status. For example, since gopher tortoise burrows and habitat found within the alternatives and associated 300-foot buffers may be impacted, FFWCC Gopher Tortoise Permitting Guidelines pertaining to surveying, excavating, and relocating will be followed once a preferred alternative is selected.

- Avoiding potential impacts to manatees. Depending upon the methodology used for bridge installation, potential protection measures could include stopping work if a manatee comes within a specified distance of in-water work, posting observers to watch for manatees, and/or monitoring turbidity barriers for potential entanglement. *Standard Manatee Conditions for In-Water Work, 2011*, developed by the FFWCC and the USFWS will be followed, as necessary. Although demolition is not anticipated, if explosives are to be utilized, *then the Guidelines for the Protection of Manatees and Sea Turtles during the Use of Explosives in the Waters of the State of Florida* will also be implemented.

- Minimizing direct/indirect wetland impacts, e.g., sedimentation, by utilizing appropriate stormwater design and BMP at wetland and stream crossings during construction. Regulatory agencies will have the opportunity to review 60% plans that will include the proposed design for crossing structures via the joint ERP application. The 60% plans submitted with the ERP application will also contain a design erosion control plan that will be subject to regulatory agency review and comment. Design plans will follow

NWFWMD regulations requiring that an operating permit be obtained for the constructed stormwater facilities.

- Per the suggestion of the USFWS, a survey for bald eagle nests within the preferred alternative and associated buffers will be conducted one year prior to construction.
- If seasonally-appropriate surveys for federally-listed plants potentially associated with the preferred alternative are conducted, the project sponsor will also consider and avoid potential impacts to state-listed plants, where practical.
- Implementing *Standard Protection Measures for the Eastern Indigo Snake* during construction.
- Implementing *Construction Special Provisions Gulf Sturgeon Protection Guidelines* during construction.
- Utilizing "sea turtle friendly" lighting strategies on bridges, if deemed necessary.
- Conducting a Phase II RFS field evaluation for a representative sample of potential ponds within 1,500 feet of the preferred alternative during design and permitting. A re-assessment of the DE will be based on the results of the Phase II field evaluation.
- Facilitating movement of black bears via wildlife crossings, if deemed necessary.
- Utilizing signage informing motorists of potential wildlife hazards, e.g., deer and bear crossings, if deemed necessary.
- Invasive/exotic species will be managed and controlled in accordance with FDOT's *Standard Specifications for Road and Bridge Construction* and through the use of BMP. The contractor will be required to monitor turf areas and remove all competing vegetation, pest plants and noxious weeds as listed by the Florida Exotic Plant Pest Council, Category 1 *List of Invasive Species*. Insecticides and herbicides used to control invasive/exotic species will be approved by the Florida Department of Agriculture.
- All Reasonable Assurance measures, as previously described in this section, will be met.

In addition, wildlife passages may be provided to reduce habitat fragmentation and limit roadway mortality. Wildlife passages would be installed in appropriate locations in accordance with FDOT Wildlife Crossing Guidelines (see Appendix B of the Endangered Species Biological Assessment Report (ESBAR)).

4.3.14.4 Mitigation Measures

Mitigation will be required for direct and indirect wetland impacts (See Section 4.3.4.5 in this report).

4.3.14.5 Permits

The need for some wildlife and/or plant "take" permits will not be determined until a preferred alternative is selected and additional species surveys are conducted. Potential required permits from federal and/or state agencies will be identified as necessary in the final EIS. Since resolution of all agency concerns will not be achieved with the completion of this Draft EIS, FDOT will address agency concerns in the Final EIS and, if necessary later project phases consistent with reasonable assurance per 23 CFR 771.133 discussed in **Sections 4.3.5** and this section of the Draft EIS.

4.3.15 Farmlands

After ETAT review of the project in the EST, the NRCS responded with the following comment concerning farmlands (comment and response presented in Appendix I):

- *Due to future food quantity concerns, impacts on farmland should be evaluated.*

A Farmland Application was submitted to NRCS. The NRCS Farmlands letter is included in the appendix. This comment is addressed in summary form in Section 3.5.7 and in the section below, as follows:

The potential for the project to impact protected farmlands has been evaluated in accordance with the Farmlands Protection Policy Act of 1984; the January 9, 1985 Letter of Agreement between the FHWA, Florida Division and the Soil Conservation Service [now the Natural Resources Conservation Service (NRCS)] Gainesville Office; a letter dated November 1, 1999 from the NRCS State Soil Scientist to the FDOT Central Environmental Management Office; and Part 2, Chapter 28 of the FDOT *PD&E Manual*.

Through coordination with the NRCS, it has been determined that the only involvement with Prime or Unique Farmlands occurs with Alternative 15. The NRCS identified Prime Farmlands on either side of the Alternative 15 (**Figure 4-31**). Therefore, the potential for the Alternative 15 to impact Prime Farmlands is unavoidable unless the alignment is altered significantly. **Table 4-53** provides a summary of the Prime and Unique Farmland Impacts.

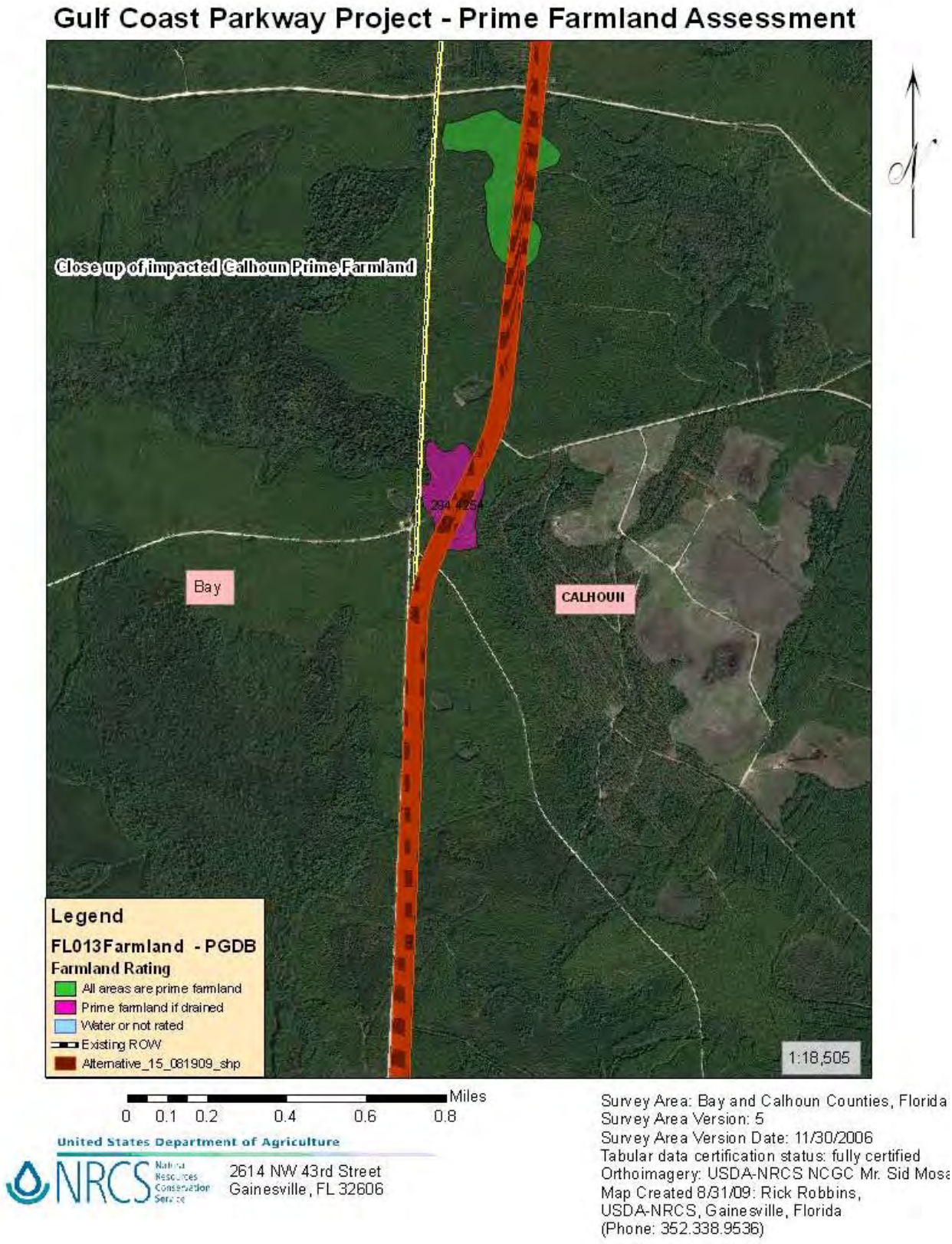
Table 4-53: Prime and Unique Farmland Impacts

Alternative	Prime Farmland Acres*	Unique Farmland Acres	Crop Type
8	0	0	N/A
14	0	0	N/A
15	14.98	0	N/A
17	0	0	N/A
19	0	0	N/A

*Prime Farmland Acres: Acres derived from Soil Survey Geographic (SSURGO) products for Bay, Gulf, and Calhoun Counties. Prime Farmland map units were clipped based on alternatives and acreage calculated.

Since Prime Farmland would be affected by Alternative 15, a *Farmland Evaluation Form* (**Appendix J**) for Alternative 15 was completed in accordance with the requirements in 7 CFR 658.5 (b) and submitted for a determination of significance by the NRCS. The NRCS determined that the relative value of this Prime Farmland scored 71.19. Part 2, Chapter 28 of the FDOT, *PD&E Manual* states that sites receiving a total score of less than 160 points are to be given a minimal level of consideration for protection and no additional sites are required to be evaluated. Alternative 15 did not receive a score of 160 or greater; therefore, no other alignments for Alternative 15 were evaluated.

Figure 4-31: Alternative 15 Involvement with Prime Farmland



4.3.16 Scenic Highways

Review of the FDOT *Scenic Highway Approved Corridors*[56] web site indicates that there are no designated or candidate scenic highways within or adjacent to the study area.

4.3.17 Utilities and Railroads

This section describes the potential involvement of the project alternatives with utilities and railroads.

4.3.17.1 Utilities

The No Build Alternative would have no involvement with utilities. Although much of the build alternatives are on new alignment, there are locations where the alternatives' alignments cross, or are parallel to, utility easements. The Build Alternatives involvement with utility easements is summarized in **Table 4-54** and shown on **Figure 4-32**).

Table 4-54: Build Alternatives' Involvement with Utility Easements

Alternatives	Other Utility Crossings (number)	Distance Parallel to Other Utility Easement (in feet)	Electrical Crossings (number)	Distance Parallel to Electrical Easement (in feet)	Oil, Water, or Gas Line Crossings (number)	Distance Parallel to Oil, Water or Gas Line Easement (in feet)	Notes
8	N/A	5,720	8	N/A	N/A	N/A	Power station adjacent to right-of-way parallel utilities 200 feet east of right-of-way
14	N/A	5,720	11	7,150	N/A	22,480	
15	N/A	5,720	7	N/A	N/A	N/A	
17	N/A	N/A	6	N/A	N/A	N/A	Power station adjacent to rigt-of-way; parallel utilities 200 feet east of right-of-way
19	N/A	N/A	8	20,070	1	N/A	

From **Table 4-54**, it is apparent that Alternative 14 has the most utility crossings and the most length of road right-of-way adjacent to utilities. Alternative 19 would have the second most length of road right-of-way shared with utilities and the second most utility crossings (nine). Alternatives 1 and 15 the same amount of right-of-way parallel to utilities, but Alternative 1 has one more utility crossings (eight) than Alternative 15 (seven). Alternative 17 has the least involvement with utilities, having no utility immediately adjacent and parallel to its right-of-way and the fewest number of crossings (six)/ Alternative 17 would be, along with Alternative 8, adjacent to a power substation that will have to be considered during construction.

Gulf Power Company has indicated they would consider the proposed project's crossings of their powerline easements as "routine". While there may be no particular problems with these crossings from the provider's perspective, there will be design considerations regarding how close the road should come to a power pole structure, provision of access to power substations, etc. As long as the proposed road is near grade there should be no vertical clearance issues. The only locations where the alternatives would not be near grade would at the

Figure 4-32: Build Alternatives Involvement with Utility Easements

proposed high-level bridge crossing of the ICWW and where Alternatives 8 and 17 would have a flyover structure across the Bay Line Railroad and US 231

In addition, there are areas where existing roads are incorporated into the project. In these areas existing utilities could be affected by some construction activities such as earth moving and pile driving. As a result, there may be a need to temporarily re-route utility lines or cables. At the project termini there may be the need to relocate utilities along the existing roads further back in the right-of-way to accommodate the intersection improvements. Such relocations may result in intermittent and short-term interruption of service. Prior to construction, coordination will be conducted with utility providers to minimize any disruption in service.

4.3.17.2 Railroads

The No Build Alternative would have no involvement with either the Bay Line Railroad or the Apalachicola Northern; however under the No Build Alternative those roads that would be utilized instead of the Gulf Coast Parkway would continue to have at-grade railroad crossings [US 98 (Tyndall Parkway, SR 22, Star Avenue, Nehi Avenue, etc.). Also, none of the Build Alternatives would have involvement with Apalachicola Northern Railroad which is located east of the study area. However, Build Alternatives 14, 15, and 19 would have involvement with the Bay Line Railroad where they cross the railroad tracks at grade to tie-in to US 231.

In addition, an at grade crossing will require traffic control devices be installed at these locations. Traffic control devices for railroad crossings consist primarily of signs, pavement markings, flashing light signals, and automatic gates. The type of warning device(s) to be installed depends on the type of highway, volume of vehicular traffic, volume of railroad traffic, speed of vehicular traffic, volume of pedestrian traffic, accident record, and geometrics of the crossings, among others. This is an issue that will be worked-out during the design phase of the project.

Although with only three to four trains running daily on the Bay Line railroad, the at-grade crossings should not create a substantial effect on traffic travel times, at least initially. However, the schedule of the trains vary throughout the day, with no set time, it makes it difficult for freight businesses to schedule travel to avoid waiting on trains. Further, if all the measures to stimulate economic development in the region are implemented and prove effective, the number of trains traveling the Bay Line railroad may increase. Alternately, the freight traffic utilizing the Gulf Coast Parkway could increase to the point that the conflicts with train traffic could affect delivery of goods and thereby the cost effectiveness of these alternatives in providing access to other intermodal facilities, potentially slowing economic growth.

Build Alternatives 8 and 17 would provide a flyover at US 231 that would avoid conflicts with the railroad, but will require a structure designed to meet the vertical and horizontal clearance requirements of the railroad as well as US 231 **(see Section 2**). By avoiding conflicts with train traffic, Alternatives 8 and 17 would be the safer and more efficient alternatives.

Coordination with the Bay Line Railroad will be conducted during design to ensure that the Gulf Coast Parkway crossing of the railroad track meets clearances, geometrics, utilities, provisions for future tracks, and maintenance road requirements for off-track equipment. Depending on the timing of proposed track improvements, there could be potential for a conflict with the construction of the Gulf Coast Parkway.

4.3.18 Navigation

After ETAT review of the project in the EST, the USACE responded with the following comment concerning navigation (comment and response presented in Appendix I):

- *Measures should be taken to avoid hazards to navigation and water flow. Secondary impacts should be evaluated during the design process.*

Coordination is on-going with the USCG to ensure the proposed crossings of navigable waterways will minimize hazards to navigation A Location Hydraulics Report has been prepared that documents the type and sizes of structures need to avoid impacts to water flow (see structure discussion in Section 2 and floodplain discussion in this section).

All of the Build Alternatives will cross the Gulf ICWW, a navigable waterway, at one of either two locations: where it passes through East Bay near Allanton Point or where it is congruent with Wetappo Creek west of Overstreet. The ICWW in the Florida Panhandle is an inland waterway, known as the Gulf ICWW, which extends from Carrabelle, Florida to Brownsville, Texas. Completed in 1949, it has a controlling depth of 12 feet and was designed primarily to handle barge traffic. In addition, recreational vessels use the waterway to access the Gulf of Mexico.

The ICWW is vital for the efficient and secure transportation of freight throughout the United States. The USACE regulates and maintains the ICWW and considers this resource their highest level of importance. The USCG has responsibility for approving the location, alignment, and appropriate navigational clearances for bridges over navigable waterways. Coordination with both the USACE and USCG has occurred during the project and will continue throughout the project's development.

Navigational guidelines and protocol for the construction of bridges are provided pursuant to 23 CFR Part 650.801-809 (Navigational Clearances for Bridges). A USCG permit is required when a bridge crosses waters which are: 1) tidal and used by recreational boating, fishing, and other small vessels 21 feet or greater in length, or 2) used or susceptible to use in their natural condition or by reasonable improvement as a means to transport foreign commerce. The USCG has established guide clearances for bridges over certain frequently navigated waterways. The guide clearances are considered to provide adequate clearance for the reasonable needs of navigation but are susceptible to change under particular circumstances. Where guide clearances are not established, the horizontal and vertical clearances for a proposed bridge project are determined on a case by case basis.

In the study area, the only navigable waterway with an established guide clearance is the ICWW which has a vertical clearance requirement of 65 feet and a horizontal clearance requirement of 150 feet. Bridges upstream and downstream from the proposed ICWW crossing at Allanton Point are the US 98 (DuPont) Bridge and the CR 386 (Overstreet/ W.G. Hardy) Bridge (**Appendix P**). Both bridges provide 150 feet of horizontal clearance. While the Overstreet Bridge (constructed in 1988) provides 65 feet of vertical clearance, the older DuPont Bridge (constructed in 1965) provides only 50 feet of vertical clearance.

Wetappo Creek does not have a guide clearance established. It is primarily used for recreational purposes. An initial site survey verified usage of the waterway by high-mast sailboats and other recreational boats (**Appendix P**). Vessels accessing the waterway are limited to those that can pass under the existing DuPont and Overstreet Bridges. Any vessels requiring clearance higher than 50 feet but below 65 feet are restricted to the Overstreet Bridge for entry to or exit from East Bay and Wetappo Creek. As vessels travel upstream from the East Bay entrance to Wetappo Creek, the more narrow the waterway becomes until the creek passes under the at-grade crossing (bridge) by Pleasant Rest Road. From this point, only vessels such as small fishing boats, canoes, and kayaks can navigate further upstream (see **Appendix P**).

Wetappo Creek has also been reported to provide harbor to many vessels of varying size during hurricanes. Some of these vessels could necessitate that any bridge constructed across the Wetappo Creek at the proposed location provide high-level clearance in order for its continued use as a safe haven during severe weather.

Figure 4-33: Wetappo Creek and the Intracoastal Waterway Crossing by Alternatives 8, 14, and 15

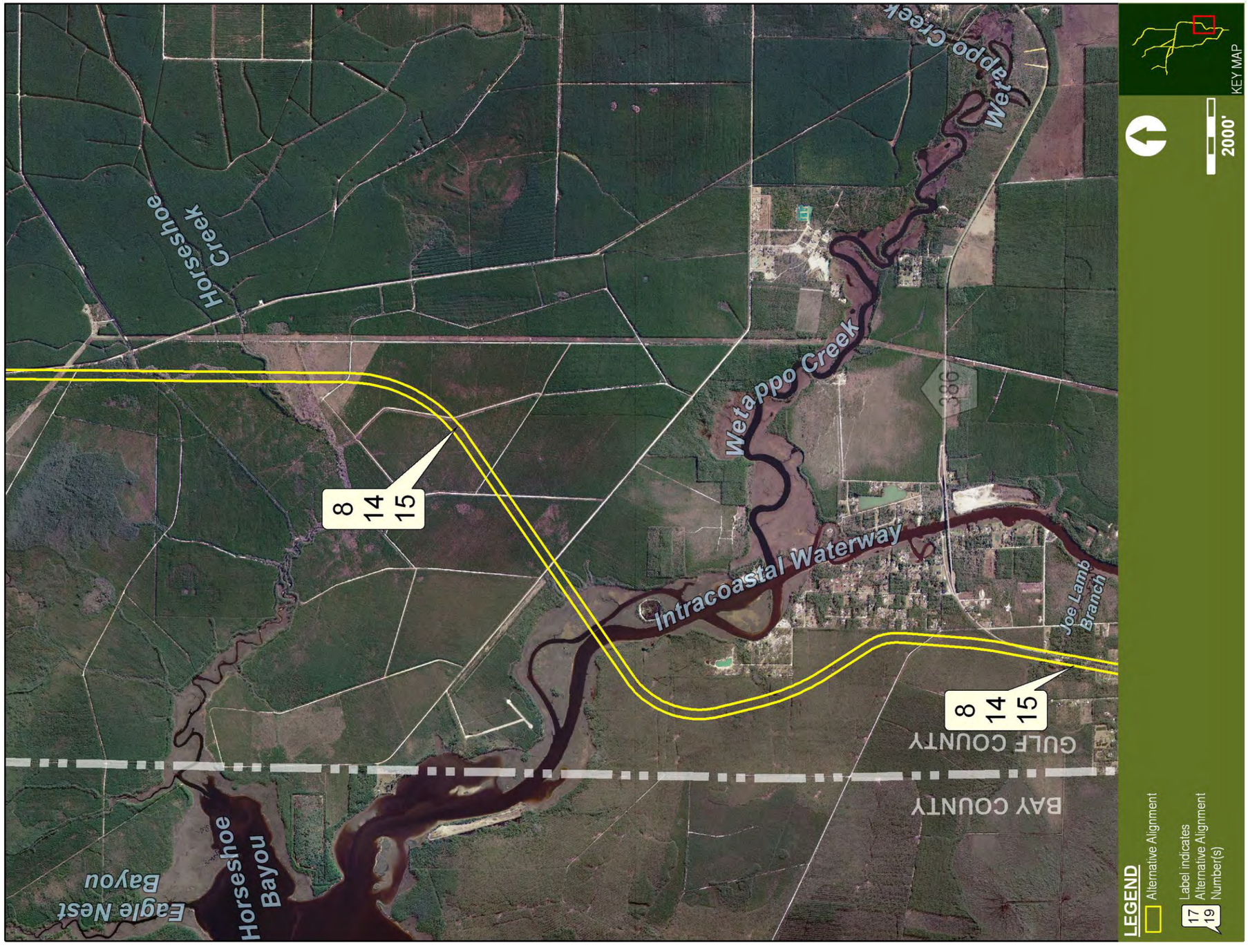
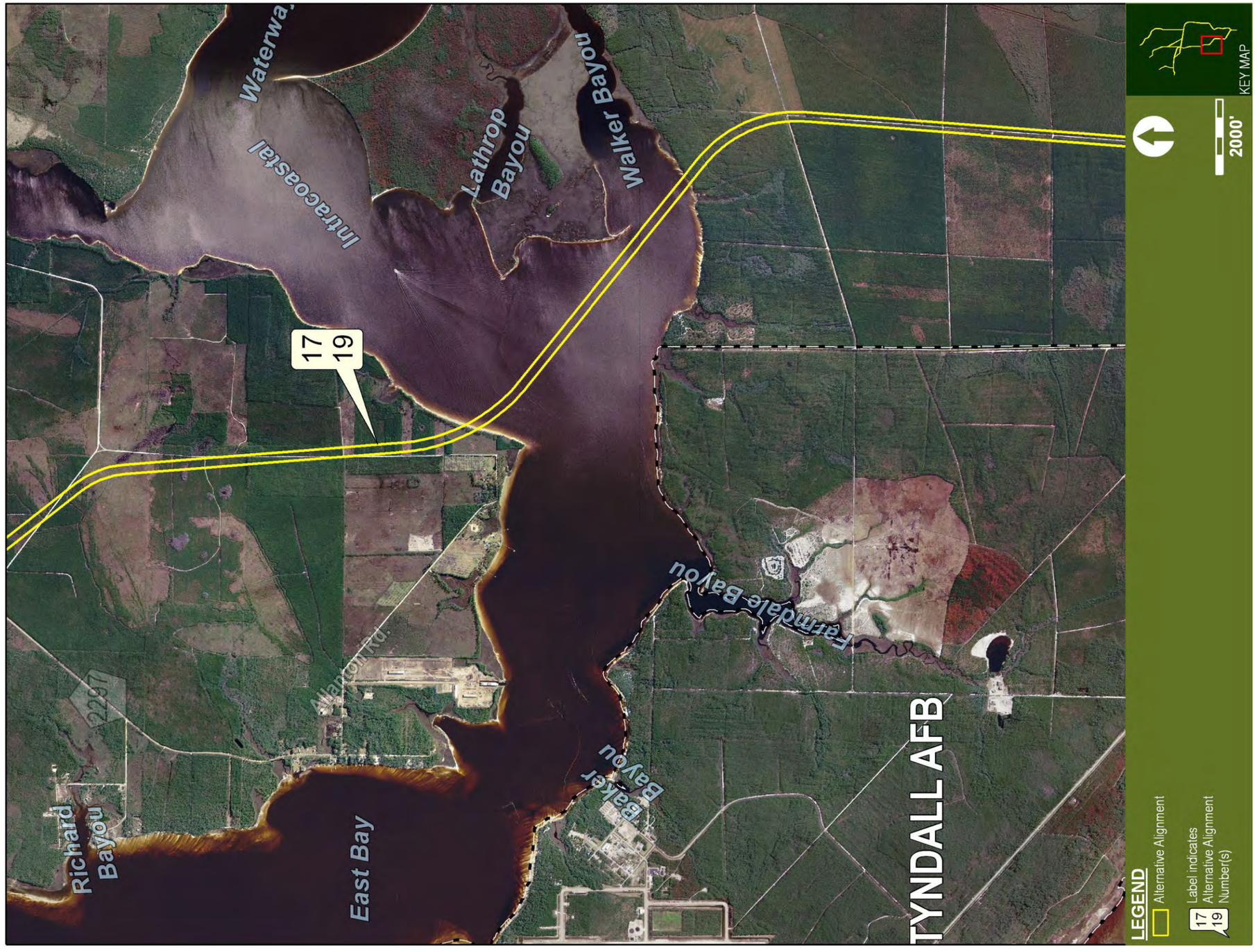


Figure 4-34: East Bay Crossing by Alternatives 17 and 19



The proposed alternatives that cross Wetappo Creek (Alternatives 8, 14, and 15) cross the creek where it is immediately adjacent to the ICWW (**Figure 4-33**). Since the crossing of ICWW requires a high-level bridge and the location of the proposed crossing of Wetappo Creek is so close to the crossing of the ICWW, the proposed crossing of both waterways will be on the same 65-foot high structure. The total structure length is estimated to be 7,000 feet. This length of structure would span both waterways and the adjacent emergent marsh. **Figure 4-34** shows the location of the proposed 65-foot high level crossing of East Bay by Alternatives 17 and 19. This structure is estimated to be approximately 9,100 feet in length. This length of structure is needed to span the width of East Bay.

The proposed minimum vertical clearance for the bridges across navigable waters is presented in **Table 4-55**. **Table 4-56** summarizes the proposed horizontal clearances for the navigation channels of the waterway crossings. The crossing of the ICWW in East Bay is proposed to have the same vertical (65 feet) and horizontal (150 feet) clearances as the DuPont and Overstreet bridges. The ICWW/Wetappo crossing is also proposed to have 65 feet vertical clearance. The required horizontal clearance at this location is yet to be determined (TBD). Coordination with the USCG is ongoing and when this information is provided it will be included in the final EIS (see **Appendix J** for correspondence between FDOT and the USCG).

Table 4-55: Proposed Vertical Clearances for Gulf Coast Parkway Bridges over Navigable Waters

Waterway	Alternatives				
	8	14	15	17	19
East Bay ICWW	N/A	N/A	N/A	65 ft.	65 ft.
ICWW at Wetappo Creek	65 ft.	65 ft.	65 ft.	N/A	N/A
Wetappo Creek at ICWW	65 ft.	65 ft.	65 ft.	N/A	N/A

Table 4-56: Proposed Horizontal Channel Clearances for Gulf Coast Parkway Bridges over Navigable Waters

Waterway	Alternatives				
	8	14	15	17	19
East Bay ICWW	N/A	N/A	N/A	150	150
ICWW at Wetappo Creek	150	150	150	N/A	N/A
Wetappo Creek	TBD	TBD	TBD	N/A	N/A

Because the bridge across the ICWW, whichever crossing site is selected, will be constructed in accordance with FDOT structure design guidelines and will meet USCG requirements for bridges over navigable waters, including the provision of aids to navigation such as lighting, the structure should not provide a hazard to vessels using the waterway. However, should the bridge construction require in-water work, there could be a potential for conflicts between construction activities and vessels on the waterway. Activities that could result in blockage of a channel or interrupt traffic flow are required to obtain authorization from the USCG. FDOT *Standard Specifications for Road and Bridge Construction* requires under Section 103-1.3 that the USCG be provided 60 days in advance with drawings showing the location of temporary work structures relative to the navigable waterway, lighting on the temporary work structures that meets the USCG requirements, and notification to mariners of construction in or near the navigation channel. These measures should be sufficient to minimize conflicts between bridge construction activities and vessels navigating the either the ICWW through East Bay or the ICWW/Wetappo Creek.

FDOT will work closely with the USCG to ensure that this project meets all navigational requirements and that the bridge is constructed in a manner that will meet the needs of waterway users. FDOT will meet with the USCG to explain in more detail its plans concerning the bridge and to fully accommodate USCG requirements. FDOT will utilize Section – 103-1.3 of the *Standard Specifications for Road and Bridge Construction* to minimize conflicts between construction activities and waterway users.

4.3.19 Permitting

Coordination with permitting agencies has been on-going throughout the development of this project from the time the project was first published in the FDOT's Environmental Programming Screen to the present. The intent of this coordination has been to identify the resource agencies' concerns, to coordinate the development of alternatives that avoid and minimize impacts to natural resources as much as feasible, to coordinate the methodology to be used to identify and assess impacts, and to coordinate the identification of conceptual mitigation measures for the impacts of the selected alternative. This coordination effort, described in more detail in **Section 5** of this report, resulted in the preparation of Issue Action Plans which identified the methodology for conducting the analysis of the alternatives' impacts on resources for which the agencies had expressed special concern. These methodologies have been followed in the evaluation of the project alternatives on these resources (wetlands, wildlife and habitat, coastal and marine and ICE). Reports have been prepared summarizing the evaluation of the project's involvement with these resources and submitted to the agencies for review. The agencies have submitted comments (**Appendix J**) and FDOT has responded to those comments.

Coordination with the resource agencies will continue throughout the PD&E study and into design and permitting. Following selection of the preferred alternative, more detailed field surveys will be conducted that will provide the more accurate assessment of impacts that is needed to identify specific conceptual mitigation requirements. This information will be provided to the agencies and mitigation concepts will be developed jointly between the agencies and the FDOT. Although resolution of all agency concerns will not be achieved with the completion of this Draft EIS, FDOT will utilize the Reasonable Assurance Process discussed in **Sections 4.3.5 and 4.3.14** to provide assurance that agency concerns will be addressed in the remaining project phases.

The USACE and the FDEP/NWFWMD regulate wetlands within the project area. The USFWS, USEPA, NMFS, and the FFWCC review and comment on wetland permit applications. It is currently anticipated that the following permits will be required for this project:

Permit	Issuing Agency
Environmental Resource Permit	FDEP/NWFWMD
Section 404 Dredge and Fill Permit	USACE
National Pollutant Discharge Elimination System (NPDES) General Permit	FDEP
Bridge Permit	USCG
Section 404 Water Quality Certification	USACE

The complexity of the permitting process depends greatly on the degree of impact to the jurisdictional area. The NWFWMD requires an ERP when construction of any project results in the creation of a water management system or has an impact to "Waters of the State" or isolated wetlands. Currently, the FDEP still administers the permitting for wetland impacts. An individual permit is likely to be required with mitigation for wetland impacts, since impacts will be greater than one acre.

For the USACE, an individual permit will also be required. An individual permit requires compliance with Section 404(b)(1) guidelines of the Clean Water Act, including verification that all impacts have first been avoided to the greatest extent possible, unavoidable impacts have been minimized to the greatest extent possible, and unavoidable impacts have been mitigated in the form of wetlands creation, restoration, and/or enhancement.

Any project which results in the clearing of five or more acres of land will require a NPDES permit from FDEP, pursuant to 40 CFR parts 122 and 124. In association with this permit, a required Stormwater Pollution Prevention Plan (SWPPP) will be implemented during the construction of the project. The primary functions of the NPDES requirements are to ensure that sediment and erosion during construction of the project are controlled. These permits typically utilize BMP to ensure compliance.

4.3.20 Indirect and Cumulative Effects

After ETAT review of the project in the EST, the USEPA, FDEP, NMFS, USFWS, and NWFWMD responded with the following comments concerning ICE (comment and response presented in Appendix I):

- *USEPA - Water quality and aquatic habitat protection should be priority considerations. Access control and future land use must be defined. Stormwater management must be evaluated. Additionally, the spread of invasive species as a result of rapid development is a concern.*
- *FDEP - Stormwater runoff as a result of potential rural development and its effects of waterbodies are of particular concern.*
- *NMFS - Stormwater runoff as a result of increased residential and commercial development must be addressed. Limited access may help control sprawl.*
- *USFWS - Secondary and cumulative effects must be evaluated. Secondary and cumulative impacts to wildlife and habitat should be minimized through limited corridor access, proven roadway design, mitigation areas, wildlife crossings, environmentally-sensitive bridge crossings, non-native species control, protected and rare plant protection, water quality protection and hydrologic connection maintenance.*
- *NWFWMD – ICE must be analyzed. Dedicated water resource protection should be implemented, including stormwater management, waterfront buffer zones, wetland protection, wetland mitigation, construction and design BMP, and limited access. Potential wetland mitigation plans should be considered, including early interagency planning in accordance with FS.*

Water quality issues are addressed in Sections 3.6.1 and 4.3.7. An ICE Analysis Report has been prepared for this project. This report documents the analysis of ICE including the analysis methodology developed in concert with ETAT representatives. These comments are addressed in the section below, as follows:

The discussion of project impacts to this point has been a summary of the analysis of the direct effects the project would have on the environmental resources in the study area. However, the NEPA of 1969, as amended also requires an assessment of ICE. The CEQ defines indirect effects as those effects "caused by the action and occur later in time and are farther removed in distance, but are still reasonably foreseeable" (40 CFR 1508.8). They also state that indirect effects "may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems" (40 CFR 1508.8).

The CEQ (in 40 CFR 1508.7) defines cumulative effects as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (Federal or non-federal) or person undertakes such other actions". Because the Build Alternatives are predominantly located in rural, undeveloped areas there is limited information available for predicting "reasonably foreseeable future actions". Therefore, it was decided to utilize a panel of land use planners with intimate knowledge of the study area from both the public and private sector to determine future

development scenarios under the alternatives Using the Delphi technique to obtain as unbiased an assessment as possible, the members of the expert panel, working individually, allocated the projected future population for the study area for each of the Alternatives, including the No Build Alternative. The No Build scenario served as a baseline for comparison of the project's effects against the No Build conditions. A detailed description of the Delphi process and the results of the Delphi Group's work are summarized in the *Gulf Coast Parkway Indirect and Cumulative Effects Report*[57]. It should be noted that the Delphi technique is an acceptable method for use in indirect and cumulative effects analysis, especially in areas where sufficient data is not available to use quantitative models, and the use of this technique was approved by an interagency advisory group used to develop the indirect and cumulative effects Issue Action Plan (Appendix L).

4.3.20.1 Indirect Effects Analysis Methodology

The study area for determining the locations of future development, designated as the Socioeconomic Potentially Affected Resource Area (PARA), is larger than the Gulf Coast Parkway project study area. Factors affecting the decision of where to draw the boundaries included the presence of natural boundaries, such as water bodies, existing land uses, on-going development patterns and availability of data.

Because there is so much variability in the land uses within the Socioeconomic PARA, the area was subdivided into smaller areas having similar social fabric (See **Figure 4-35**). The boundaries for these sub-PARAs were developed with input from members of the ETAT that reviewed the project in the FDOT ETDM program.

The primary concern expressed about the project by the resource agencies was the potential for the project to induce growth and the impacts of that induced growth. To determine impacts, growth areas had to be identified. Since the recession of 2008, future development planning seemingly ceased. Even some approved development projects were stopped. Without planning data to support projections of how much and where future growth would occur, it had become increasingly difficult justify the allocation of future population. FDOT's solution was to request the participation of planners from seventeen private and public organizations familiar with the study area in an advisory group (the Delphi Group). Representatives of the organizations attended a meeting in the spring of 2011 during which background information was provided to the attendees. Six organizations attending the meeting agreed to participate in the population allocation effort for the project alternatives. Because the method for obtaining consensus on the location of future development used the Delphi Technique, no other group meetings were held. (The Delphi Technique is a specialized group problem-solving method, developed for the United States Air Force by the RAND Corporation, to reconcile the knowledge and judgment of several experts in forecasting realistic, rather than theoretical, future scenarios.) Group members were provided with population projection, a questionnaire (**Appendix R**) to complete that when completed would provide the assumptions they used, and maps of the Socioeconomic PARA. They were asked to allocate the future population for the No Build and Build alternatives on the maps and resubmit them with the completed questionnaire and any other information that supported their decisions. Information from the Delphi Group was compiled by FDOT's consultant for use in estimating the project's indirect (induced growth) effects.

A Future No Build Alternative Development Scenario was created with the group's input as the baseline for comparison of the Future Build Alternatives Development Scenarios. Then the projected future population (discussed in Section 4.1.1.1 for discussion of the projected future population numbers) was allocated to Future Development Scenarios developed for each build alternative. The locations and sizes of the developments were identified using established planning principles (such as land use patterns, zoning ordinances, land development codes, land suitability, access, distance to employment and shopping centers, availability of infrastructure, etc.) and input from the Delphi Group. Areas where the projected future population for a Build Alternative was greater than the population under the No Build Alternative were deemed to have induced growth, with the induced growth population equivalent to the difference between the Build Alternative population and the No Build Alternative population. This apparent "increase" in population is not an increase in the total population projected for the project area, but a different allocation of the projected population to potential development areas

Figure 4-35: Socioeconomic PARA with Sub-PARAs

based on growth inducing factors of the Build Alternatives, such as the creation of new interchanges or intersections, or access to previously undeveloped areas that might be more attractive to future populations than potential development locations under the No Build Alternative (such as proximity to employment or shopping). Conversely, the Mexico Beach PARA has permitted development capacity sufficient to accommodate the projected population (2,500 dwelling units that will accommodate 4,725 people); therefore, new development was limited to commercial development. This commercial development, in the form of gas stations and convenience stores, was identified as occurring near the intersection of the Gulf Coast Parkway and CR 386. Growth along the coastline (south of US 98) was not predicted due to land development regulations that protect sensitive coastal areas and the already developed nature of the area.

The Tyndall PARA was eliminated from the population allocation because the future population within the Tyndall PARA is not affected by normal growth factors, but is the result of decisions made on a national level to do with base deployment. The predicted population that would have been allocated to the Tyndall PARA was allocated to other PARAs so there was no loss of projected population.

Since the induced growth is the result of the reallocation of population from one location within the study area to another (as a result of the differences in the Build alternatives' alignments, the induced growth impacts in one area potentially may be offset by less growth and development in another area. However, for purposes of this analysis, a conservative approach was taken, and no benefit was assigned to land that would not be developed under a Build Alternative.

To determine the indirect effects of the Gulf Coast Parkway project, the areas of induced development under each Build Alternative's future development scenario was overlaid on resource maps also showing the No Build Alternative future development scenario. GIS provided the acres of resources that were encompassed by the induced development (the difference between the No Build scenario and the Build scenario). It should be noted that it is not possible to predict how a particular location would actually be developed. Further, actual impacts depend upon a variety of factors including: the developer's attempts to avoid and minimize impacts, the development regulations in force, and the permitting requirements of regional, state, and federal agencies, including mitigation for unavoidable impacts to resources. Since these factors are unknown, the evaluation of the induced developments' effects was simply the quantification of the resource within the boundaries of the development sites which results in an overstatement of potential effects.

In addition to the analysis of potential indirect effects associated with induced development, the potential for encroachment/alteration effects was evaluated. These effects can be characterized as either ecological or socioeconomic effects. Types of ecological encroachment/alteration effects include habitat fragmentation, degradation of habitat from pollution, and disruption of natural processes. Types of socioeconomic encroachment/alteration effects include alteration of: neighborhood cohesion and stability, travel patterns of commuters and shoppers, personal safety, job creation, population changes, and aesthetic impacts. These effects are not often not quantifiable; therefore, their assessment could only be made on a qualitative basis. For instance, construction of the proposed project would improve the accessibility of the beaches in southeast Bay County and south Gulf County. This should lead to increased tourism, which would lead to greater demand for services, such as restaurants and hotels. More businesses require more employees. Without knowing the actual increase in the tourist population, it is not possible to determine what tourist-related businesses would likely be constructed during the twenty-year planning period. Therefore, it is not possible to forecast the number of jobs that would be created as a result of the project's affect on tourism, although clearly improved access is one factor in stimulating the tourist economy.

4.3.20.2 Cumulative Effects Analysis Methodology

The cumulative effects analysis combines the direct and indirect effects of the project alternatives with the past, present, and reasonably foreseeable future actions of others to determine the cumulative effects on the various

resources. The methodology utilized in this analysis of cumulative effects follows guidelines from several documents including those outlined by the CEQ in *Considering Cumulative Effects under the National Environmental Policy Act* [58] and FHWA's *Interim Guidance: Indirect and Cumulative Impacts in NEPA* [59].

The steps that were followed in this analysis are:

- Identify the resources of potential significance to be analyzed
- Determine the study area and time frame for the analysis of each resource
- Assess and describe the condition of the resource being analyzed
- Identify other past, present and reasonably foreseeable future actions
- Determine the direct and indirect effects of the project
- Assess the potential cumulative effects on each resource
- Determine the significance of the cumulative effects on the resource
- Assess the need for mitigation

Step 1: Identification of Resources of Potential Significance to be Analyzed

Resources to be considered for cumulative effects were those resources identified by the ETAT as part of their review of the project in the EST, or any other resource that was found to be adversely affected by the project, either directly or indirectly. **Table 4-57** presents those resources addressed in the PD&E Study, or requested by the ETAT for inclusion in the cumulative effects analysis, and identifies whether the resource has been evaluated, and, if not, explains why it was not analyzed for cumulative effects.

Step 2: Define the Study Area and Time Frame for the Analysis of Each Resource

The cumulative effects analysis considered both geographic and temporal study limits. Each resource had geographic study limits PARA defined based on extent of the natural resource, the functions and characteristics of the resource, the area of probable effect, and the availability and reliability of data. Where applicable, these limits were developed in coordination with the ETAT members having regulatory authority over the resource.

Additionally, a time period for the analysis was established. The temporal limits for the cumulative effects analysis were generally from 1990 to 2030. The reasons for not going further back in time were that most of the project area is very rural and hasn't changed much, even today. Further, there is very limited, readily attainable data, especially in Gulf and Calhoun Counties, prior to 1990. For this reason, the development trends occurring in other Panhandle coastal communities that experienced a similar transportation improvement were considered during the analysis.

The temporal boundary for the identification of reasonably foreseeable future projects was 2030 because that was the furthest out planning horizon for most of the adopted planning documents in the region, including the Bay County TPO's LRTP. Any resources for which these limits were modified have the appropriate temporal limits identified and the reasons for modifying the temporal limits provided in the discussion of the cumulative effects for that resource.

Step 3: Describe the Condition of Each Resource

An understanding of the current condition of a resource is necessary to establish the baseline condition of the resource and determine the trend the resource is experiencing which, in turn, is necessary to estimate the magnitude of the cumulative effects the resource would experience.

Table 4-57: Resources Analyzed for Cumulative Effects in the Gulf Coast Parkway Study Area

Resources and Issues Evaluated in the Draft EIS			Analyzed	Reasons Issue Eliminated from Cumulative Effects Analysis
Sociocultural Environment	Civil Rights and Environmental Justice		No	No substantial direct or indirect impacts
	Community Cohesion and Relocation/Displacement		No	No substantial direct or indirect impacts
	Community Facilities and Services		No	No substantial direct or indirect impacts
	Safety		No	No substantial direct or indirect impacts
	Land Use		Yes	
	Economic Environment		Yes	
	Mobility and Accessibility		No	No substantial direct or indirect impacts
	Aesthetics		No	Visual Quality and Aesthetics are not resources, but an effect.
Cultural Environment	Archaeological and Historical Resources	Archaeological Sites*	No	No substantial direct or indirect impacts
		Historical Sites*	No	No substantial direct or indirect impacts
		Cemeteries*	No	No substantial direct or indirect impacts
	Recreation Areas*		No	No substantial direct or indirect impacts
Physical Environment	Pedestrians and Bicycles		No	No substantial direct or indirect impacts
	Air Quality* and Climate Change		No	No substantial direct or indirect impacts
	Noise		No	Traffic noise is not a resource.
	Contamination Sites		No	Involvement with contaminated sites usually leads to clean-up or closure of the site resulting in an overall beneficial effect.
	Prime and Unique Farmlands*		No	No substantial direct or indirect impacts.
	Scenic Highways		No	No Scenic Highway present.
	Navigation		No	No substantial direct or indirect impacts.
Natural Environment	Wetlands*		Yes	
	EFH*		Yes	
	Aquatic Preserves		No	No substantial direct or indirect impacts
	Water Quality*		Yes	
	Water Quantity*		Yes	
	OFW		No	Included in analysis of cumulative effects to Water Quality.
	Wild and Scenic Rivers		No	No resources present.
	Floodplains*		Yes	
	Coastal Barrier Resources		No	No substantial direct or indirect impacts
	Wildlife and Habitat	21 Listed Species*	Yes	
		PCC*	Yes	
		RCW*	Yes	
		Florida Black Bear*	Yes	
		St, Andrew Beach Mouse*	Yes	
		Flatwoods Salamander*	Yes	
		Bald Eagle*	Yes	
		Wading Bird Habitat*	Yes	
		Rare Species Habitat*	Yes	
		Marine and Beach Habitat*	Yes	

*Resource or issue identified by ETAT for cumulative effects analysis

Where possible, a quantitative assessment of the current conditions and the trend each resource is experiencing was provided; however, for many resources, quantitative data were not available to document the current conditions or trends of the resource. For these resources, a qualitative discussion is presented, and the types of actions that have caused or influenced resource health and trends are identified.

Step 4: Identify Other Past, Present and Reasonably Foreseeable Future Actions

The approach used to identify other past and present actions included the development of a listing of past and present actions with the purpose of characterizing the types of actions that are representative of past and present development in the cumulative effects study area. This listing was developed from a review of public documents, adopted transportation plans, and input from local planning agencies. There is no practical way of determining all past and present actions in the study area and mapped information for many known actions is not available. Therefore, quantification of individual past and present actions was not performed. However, past actions were considered in describing the condition of the resources. Past actions were considered collectively as development that occurred prior to 2006. Present actions are considered to be the development that has occurred between 2006 and the present, shown in **Figure 4-36**. The locations of present development were determined from GIS layers provided by Bay and Gulf Counties.

Because the cumulative effects study area is largely rural, undeveloped land that is adjacent to a developing metropolitan area (Panama City, Florida), and because the new alignment segments of the Build Alternatives would provide access to previously inaccessible areas, it was assumed that future development in the area might differ somewhat from past development patterns. For these reasons, an advisory group of planners (Delphi Group) familiar with the study area was formed to identify the most likely locations where future development would occur (the No Build condition). The locations for the forecasted future developments are shown in **Figure 4-30,** and were considered the reasonably foreseeable development scenario for the cumulative effects analysis. These figure show that most development

Step 5: Identify the Direct and Indirect Impacts of the Project

The cumulative effects analysis considers the direct and indirect effects that may result from the project when added to the non-project related past, present, and reasonably foreseeable future actions. The anticipated direct effects on each resource have been identified in the Draft (EIS) prepared for this project. The indirect effects, discussed in Section 4.3.19.3 of this report, are the effects created by the developments induced by the Build Alternatives. The induced developments, shown on **Figures 4-37 through 4-42**, were located based on information provided by the advisory group and on other factors such as the availability of infrastructure, addition of new intersections or interchanges, travel times to employment centers, social considerations (proximity to schools, churches, shopping, etc.), development constraints (ordinances, regulations, etc), and development advantages (cheaper land, natural amenities, etc.). The direct and indirect effects of the alternatives are summarized in the section on each resource.

Step 6: Assess Potential Cumulative Effects on Each Resource

Incomplete or unavailable information precluded a quantitative assessment of cumulative effects on all resources within the study area. In cases where a quantitative assessment was not possible a qualitative assessment was performed.

Step 7: Determine the Magnitude of the Cumulative Effects on Each Resource

The magnitude of the cumulative effect was determined by comparing the cumulative effects on the resource to the health and trends on the affected resource.

Step 8: Assess the Need for Mitigation

As part of the cumulative effects analysis, the identification of potential mitigation measures is required. These are not measures to be undertaken by the FDOT or the FHWA, as they do not have the authority to implement mitigation for the forecasted actions of others which will be mitigated through the permitting process at the time the actions are developed. The suggested mitigation measures are broader scale measures that could be undertaken by local, state and federal agencies or other organizations, to minimize the potential cumulative effects on the resources of concern.

Figure 4-36: Locations of Present Development

Figure 4-37: No-Build Future Growth Condition

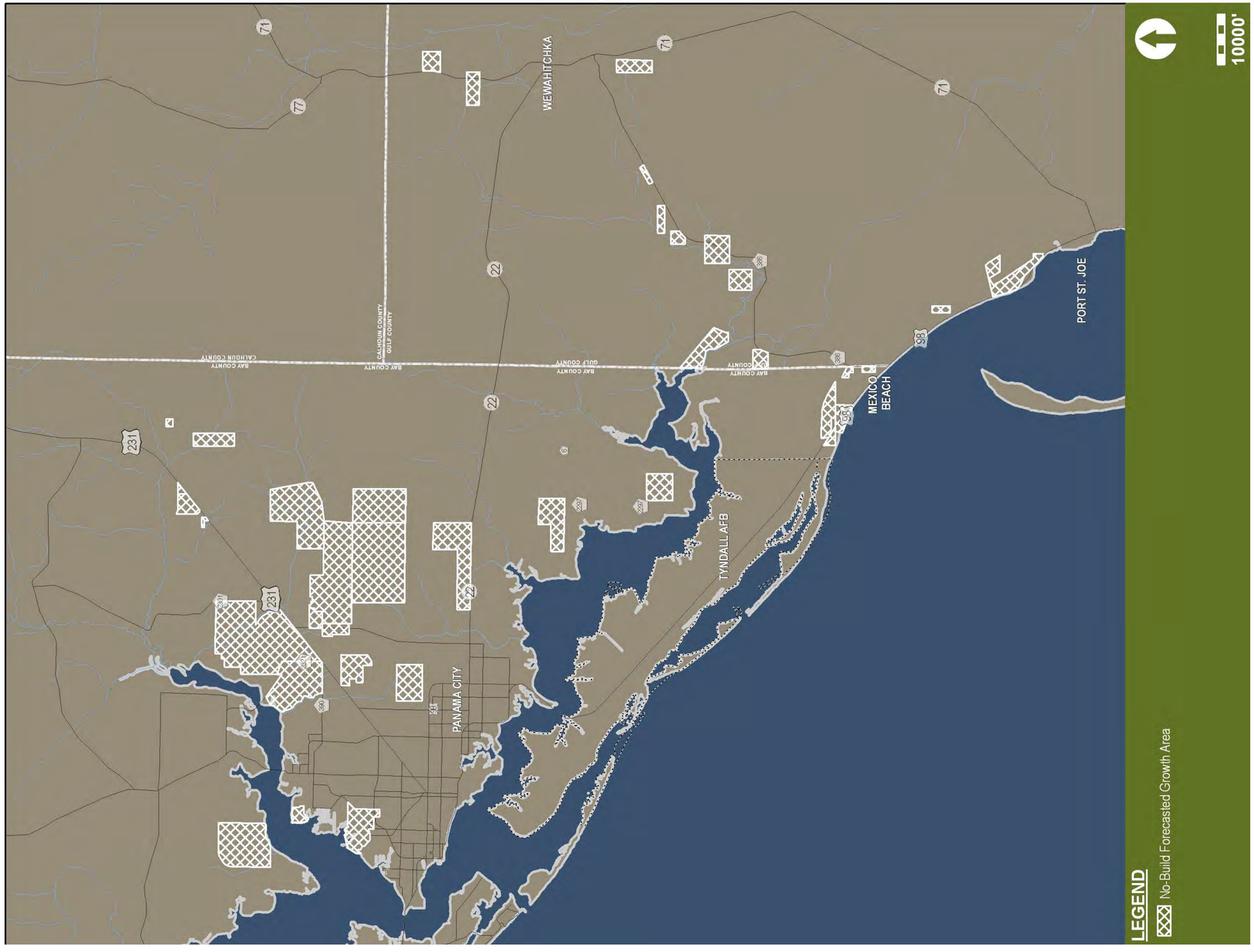


Figure 4-38: Alternative 8 Induced Developments

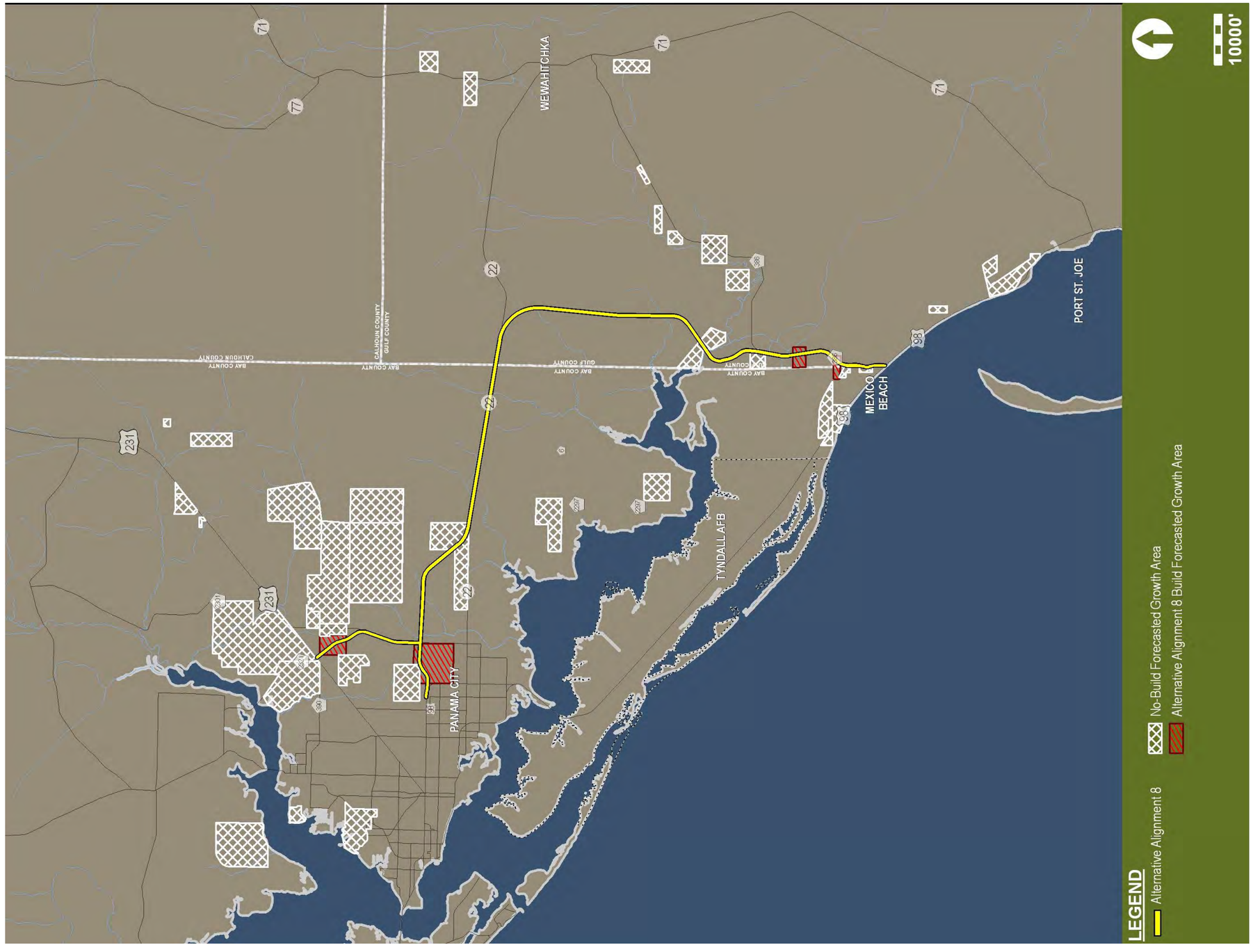


Figure 4-39: Alternative 14 Induced Developments

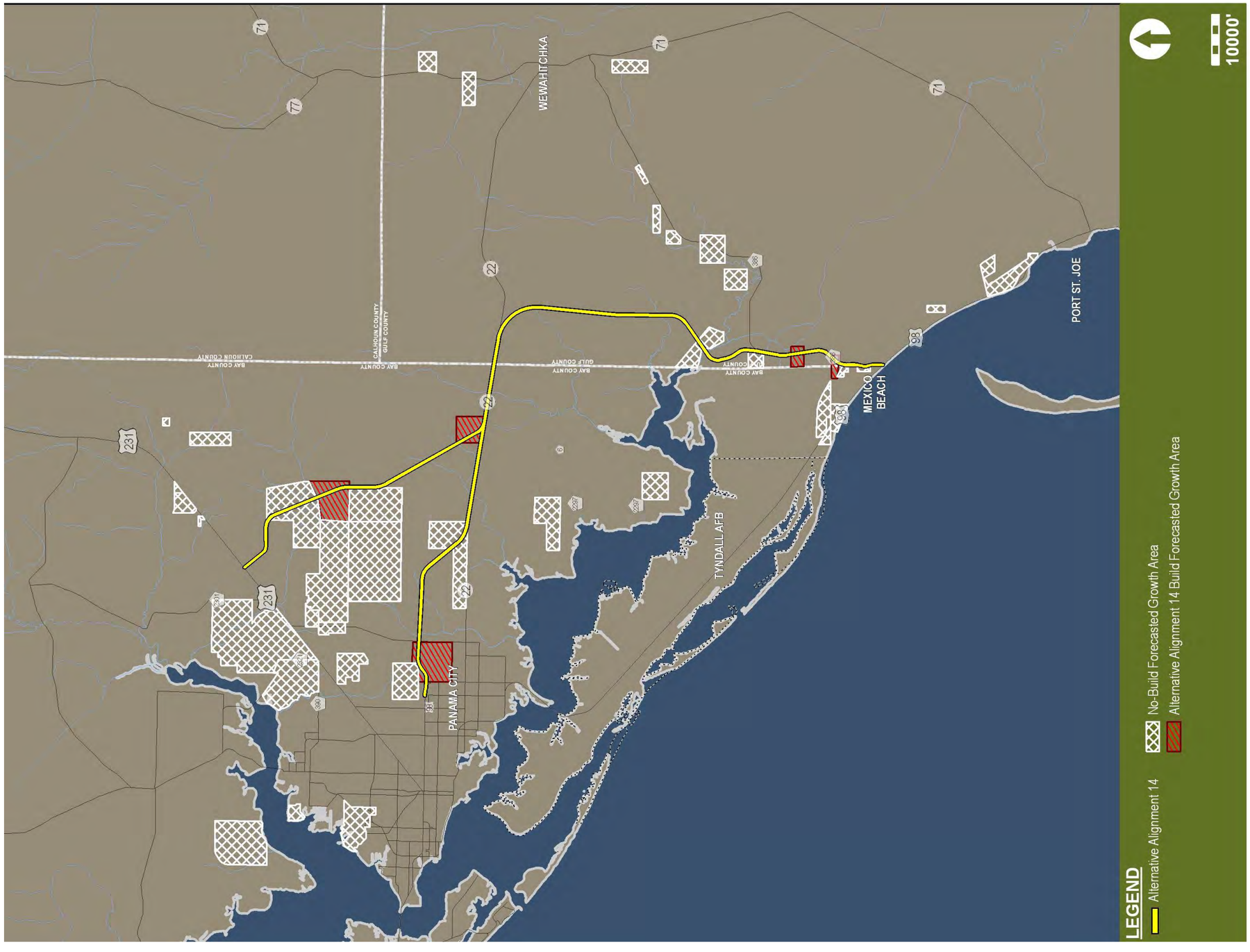


Figure 4-40: Alternative 15 Induced Developments

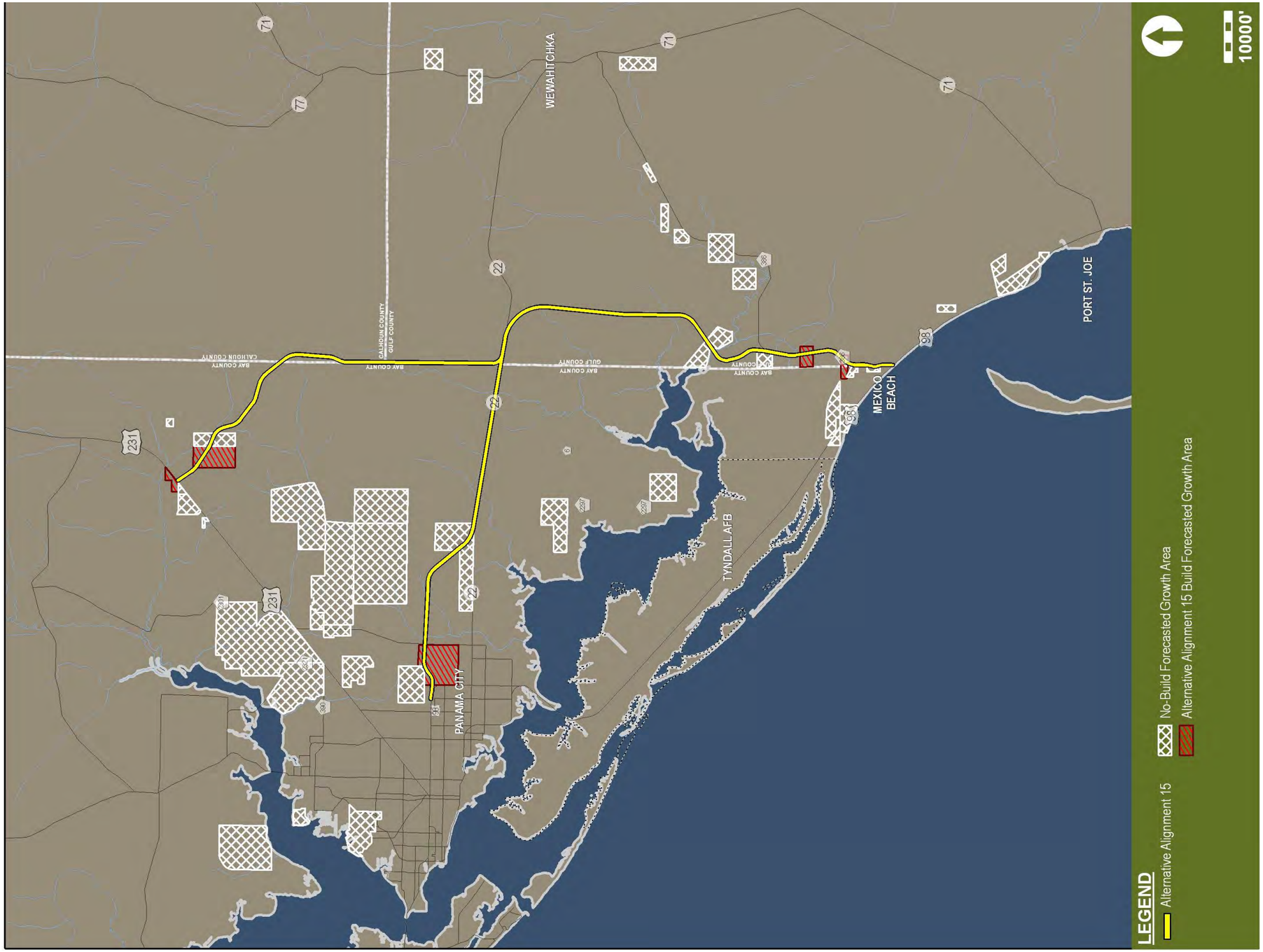


Figure 4-41: Alternative 17 Induced Developments

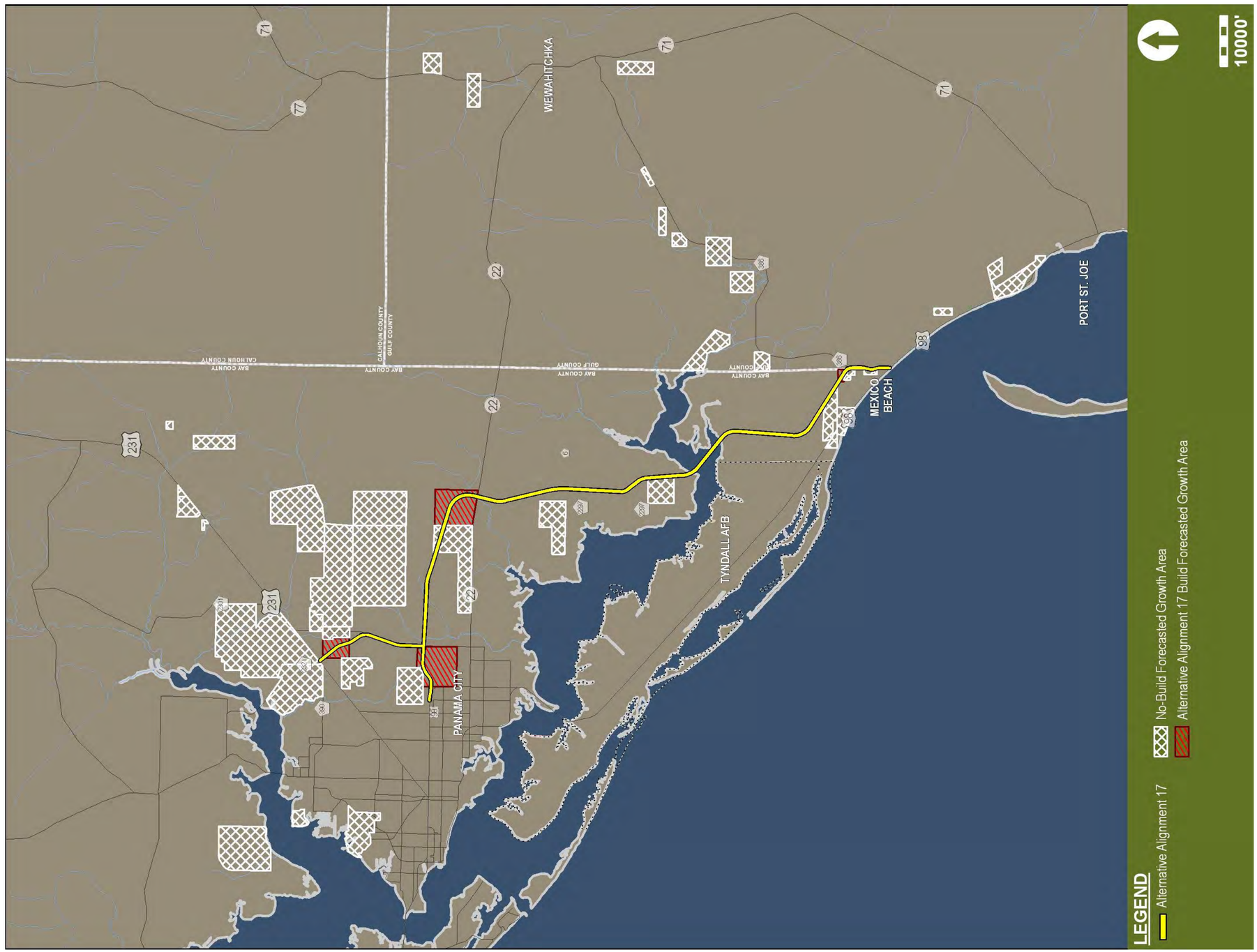
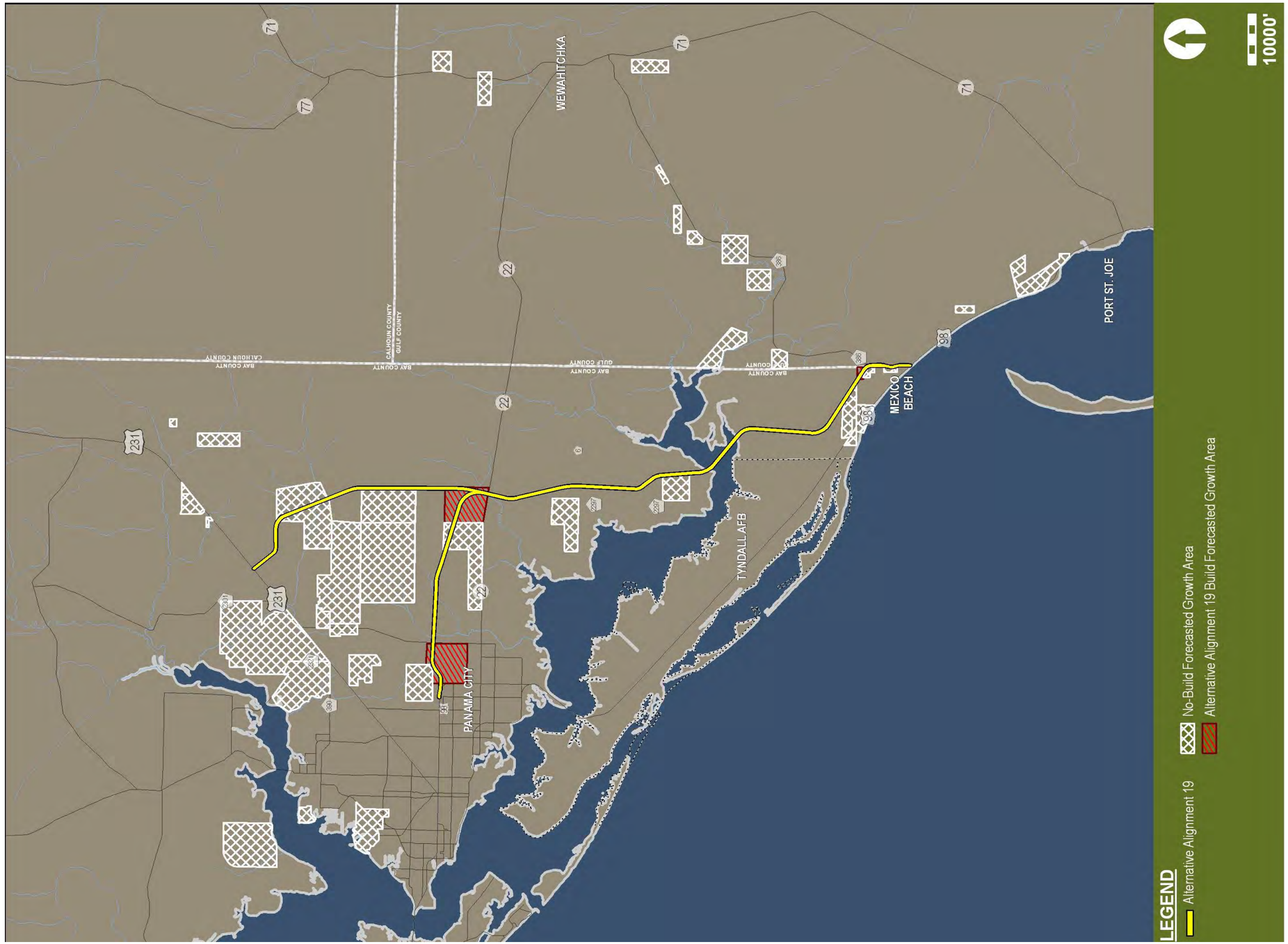


Figure 4-42: Alternative 19 Induced Developments



4.3.20.3 Results of Indirect Effects Analysis

The potential indirect effects of the proposed project have been determined based on the anticipated impacts of induced development under the Build Alternatives future development scenarios in 2030. The locations of the future development were identified with input from an advisory group of planners (Delphi Group) familiar with the past and present development patterns within the study area. The difference in development areas between the No Build Alternative future development scenario and the Build Alternatives future development scenarios was the induced development area resulting from the Build Alternatives. **Tables 4-58 and 4-59** presents the resource features that could be quantified and summarizes the effect of the forecasted development. The quantifications of the effects the induced development would have with the resources were not intended to imply that all such resources would be adversely affected since actual impacts are unknown and, in any event, would be reduced by avoidance, minimization and mitigation measures.

It should be noted that there is a degree of uncertainty regarding the effectiveness of mitigation measures. Even though mitigation is designed to offset unavoidable impacts, there is variability in the success of mitigation in providing the functions lost due to a project's impacts. Further, even the research that has been done on mitigation sites has not yet been able to compare the functionality of the mitigation sites with the lost functions from the permitted projects. It is for this reason that mitigation for impacts is not at a 1:1 ratio.

The indirect effects of the induced growth occurring under the Build Alternatives are not considered substantial. Features evaluated under the socioeconomic environment included conversion of land uses, business and economic environment, and civil rights and environmental justice. The conversion of agricultural or conservation land uses to residential or commercial land uses amounts to approximately 1.1 percent or less of these land uses within the PARA and only one Build Alternative (Alternative 14) would have involvement with conservation lands. The new commercial areas and involvement with enterprise zones was considered a beneficial effect. And, there were no disadvantaged (low income or minority) populations within or adjacent to the induced development areas.

Cultural resources evaluated included archaeological and historical sites and recreation. Since the location of unrecorded archaeological sites is unknown, the potential for the induced development to have involvement with such sites could not be ascertained. The Florida Master Site File lists 1110 historic sites within the PARA, none however occur within the areas of induced development. Nor would the induced development have involvement with recreation resources.

Under the physical environment, Prime and Unique Farmlands, noise, air quality and climate change, and contamination sites were evaluated. None of the induced development areas would have involvement with lands designated as Prime and Unique Farmlands by the NRCS. Traffic noise generated by the population within the induced development areas would contribute to the overall noise environment, but the size of the population within those areas is not sufficient to have a substantial effect on noise levels. Air quality within the PARA is currently in attainment with NAAQS. The population within the induced development areas would not be sufficient to effect a measureable change in air quality.

The issue of global climate change is an important national and global concern that is being addressed in several ways by Federal and State government. The transportation sector was responsible for approximately 27 percent of all anthropogenic (human caused) GHG emissions in the U.S. in 2010.[1] The majority of transportation GHG emissions are the result of fossil fuel combustion. CO2 makes up the largest component of these GHG emissions. U.S. CO2 emissions from the consumption of energy accounted for about 18 percent of worldwide

[1] Calculated from data in U.S. Environmental Protection Agency, Inventory of Greenhouse Gas Emissions and Sinks, 1990-2010.

energy consumption CO2 emissions in 2010.[2] U.S. transportation CO2 emissions accounted for about 6 percent of worldwide CO2 emissions.[3]

[2] Calculated from data in U.S. Energy Information Administration International Energy Statistics, Total Carbon Dioxide Emissions from the Consumption of Energy, http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=90&pid=44&aid=8, accessed 2/25/13.
[3] Calculated from data in EIA figure 104: http://www.eia.gov/forecasts/archive/ieo10/emissions.html and EPA table ES-3: : http://epa.gov/climatechange/emissions/downloads11/US-GHG-Inventory-2011-Executive-Summary.pdf

Table 4-58 Summary of Potential Effects on Social Resources within Build and No Build Forecasted Development Areas

Resource		Total PARA Area (in acres)	Total Resource in PARA (in acres)	*Percentage* of Resource in PARA area	*Acres* of Resource Impacted by No Build Future Development	*Percentage* of Resource Impacted by No Build Future Development	*Acres* of Resource Impacted by Alternative Induced Development					*Percentage* of Resource Impacted by Alternative Induced Development					Total Resource *Acres* Impacted by No Build and Build Forecasted Development with Project					*Percentage* of Resource Impacted by No Build and Build Future Forecasted Development				
							8	14	15	17	19	8	14	15	17	19	8	14	15	17	19	8	14	15	17	19
Land Use Change	Agriculture	612,502	286,667	46.8	18,447	6.4	1,945	3,451	2,695	2,937	3,686	0.7	1.2	0.9	1.0	1.3	20,392	21,898	21,142	21,384	22,133	7.1	7.6	7.4	7.5	7.7
	Conservation	612,502	45,867	7.4	1,248	2.7	0	5	0	0	0	0	0	0	0	0	1,248	1,253	1,248	1,248	1,248	2.7	2.7	2.7	2.7	2.7
	Conservation/Preservation	612,502	92	0.2	17	18.5	0	0	0	0	0	0	0	0	0	0	17	17	17	17	17	18.5	18.5	18.5	18.5	18.5
	Totals	612,502	332,626	54.3	19,712	5.9	1,945	3,456	2,695	2,937	3,686	0.6	1.0	0.8	0.9	1.1	21,657	23,168	22,407	22,649	23,398	6.5	7.0	6.7	6.8	7.0
Economic	Enterprise Zones	612,502	12,789	2.1	854	6.7	20	20	20	0	0	0.2	0.2	0.2	0	0	874	874	874	854	854	6.8	6.8	6.8	6.7	6.7
	New Commercial Areas	612,502	4,569	0.7	2,566	56.2	1,210	1,047	672	1,258	816	26.5	22.9	14.7	27.5	17.9	3,776	3,613	3,238	3,824	3,382	82.6	79.0	71.0	83.7	74.0
Civil Rights	Low Income Populations	612,502	110,258	18.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Minority Populations	612,502	2,537	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Prime and Unique Farmlands		756,870	19,281	2.5	43	.2	0	0	0	0	0	0	0	0	0	0	43	43	43	43	43	0.2	0.2	0.2	0.2	0.2

Table 4-59 Summary of Potential Effects on Natural Resources within Build and No Build Forecasted Development Areas

Resource			Total PARA Area (in acres)	Total Resource in PARA (in acres)	Percentage of Resource in PARA area	Acres of Resource Impacted by No Build Future Development	Percentage of Resource Impacted by No Build Future Development	Acres of Resource Impacted by Alternative Induced Development					Percentage of Resource Impacted by Alternative Induced Development					Total Resource Acres Impacted by No Build and Build Forecasted Development with Project					Percentage of Resource Impacted by No Build and Build Future Forecasted Development				
								8	14	15	17	19	8	14	15	17	19	8	14	15	17	19	8	14	15	17	19
Wetlands			756,870	304,515	40.2	14,478	4.8	1,073	1,788	997	1,376	1,745	0.4	0.6	0.3	0.5	0.6	15,551	16,266	15,475	15,854	16,233	5.1	5.3	5.1	5.2	5.3
Floodplains	100-Year Floodplain		756,870	371,526	49.1	12,675	3.4	1,001	1,543	1,008	945	1,357	0.3	0.4	0.3	0.3	0.4	13,676	14,218	13,683	13,620	14,032	3.7	3.8	3.7	3.7	3.8
	500-Year Floodplain		756,870	3,195	0.4	509	15.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Floodways		756,870	2,339	0.3	40	1.7	0	0	3	0	0	0	0	0.1	0	0	40	40	43	40	40	1.7	1.7	1.8	1.7	1.7
Water Quality	Impaired Waters		286,706	179,533	62.6	15,153	8.4	1,727	2,042	1,602	2,789	2,664	1.0	1.1	0.9	1.6	1.5	16,880	17,195	16,755	17,942	17,817	9.4	9.6	9.3	10.0	9.9
	Class I Drainage Basins		286,706	56,449	19.7	11,380	20.0	179	772	603	179	659	0.32	1.4	1.1	0.32	1.2	11,559	12,152	11,983	11,559	12,039	20.5	21.5	21.2	20.5	21.3
	Class II Drainage Basins		286,706	102,080	35.6	10,035	9.8	633	986	367	1,939	1,673	0.62	0.97	0.36	1.9	1.6	10,668	11,021	10,402	11,974	11,708	10.5	10.8	10.2	11.7	11.5
	Class III Drainage Basins		286,706	128,176	44.7	5,235	4.1	1,349	1,895	1,530	1,038	1,552	1.1	1.5	1.2	0.8	1.2	6,584	7,130	6,765	6,273	6,787	5.1	5.6	5.3	4.9	5.3
Integrated Wildlife Habitat Ranking System (IWHRS)	Priority	Percent of Total																									
	1 (Lowest)	7.3	909,569	60,072	6.6	4,361	7.3	157	161	162	199	198	0.26	0.27	0.27	0.33	0.33	4,518	4,522	4,523	4,560	4,559	7.5	7.5	7.5	7.6	7.6
	2	6.3	909,569	51,991	5.7	2,813	5.4	172	172	154	271	263	0.33	0.33	0.3	0.52	0.52	2,985	2,985	2,967	3,084	3,076	5.7	5.7	5.7	5.9	5.9
	3	9.0	909,569	73,632	8.1	6,339	8.6	612	623	605	622	597	0.83	0.85	0.82	0.84	0.81	6,951	6,962	6,944	6,961	6,936	9.4	9.5	9.4	9.5	9.4
	4	14.2	909,569	116,609	12.8	8,653	7.4	501	836	399	796	929	0.43	0.72	0.34	0.68	0.8	9,154	9,489	9,052	9,449	9,582	7.9	8.1	7.8	8.1	8.2
	5	22.5	909,569	184,832	20.3	5,203	2.8	607	886	1,114	1,138	1,322	0.33	0.48	0.6	0.62	0.72	5,810	6,089	6,317	6,341	6,525	3.1	3.3	3.4	3.4	3.5
	6	17.2	909,569	140,926	15.5	2,532	1.8	109	746	182	124	366	0.08	0.53	0.13	0.09	0.26	2,641	3,278	2,714	2,656	2,898	1.9	2.3	1.9	1.9	2.1
	7	13.5	909,569	110,511	12.2	1,207	1.1	2	139	30	6	122	0.0	0.13	0.03	0.01	0.11	1,209	1,346	1,237	1,213	1,329	1.1	1.2	1.1	1.1	1.2
	8	8.2	909,569	67,296	7.4	117	0.2	0	91	1	0	86	0	.14	.00	0	.12	117	208	118	117	203	0.2	0.3	0.2	0.2	0.3
	9	1.8	909,569	14,695	1.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10 (Highest)	0.0	909,569	562	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	100.0	909,569	821,126	0.90	31,225	0.04	2,160	3,654	2,647	3,156	3,883	0.3	0.4	0.3	0.4	0.5	33,385	34,879	33,872	34,381	35,108	4.1	4.2	4.1	4.2	4.3
Wildlife Habitat	Pineland-Scrub-Sandhills Group		909,569	368,497	40.5	14,001	3.8	968	1,667	1,515	1,771	1,597	0.3	0.5	0.4	0.5	0.4	14,969	15,668	15,516	15,772	15,598	4.1	4.3	4.2	4.3	4.2
	Beach and Marine Group		909,569	8,807	1.0	501	5.7	0	0	0	0	0	0	0	0	0	0	501	501	501	501	501	5.7	5.7	5.7	5.7	5.7
	Wading Birds Group		909,569	147,761	16.2	3,637	2.5	504	735	546	489	489	0.3	0.5	0.4	0.3	0.3	4,141	4,372	4,183	4,126	4,126	2.8	3.0	2.8	2.8	2.8
	Black Bear		909,569	637.383	70.1	23,031	3.6	2,161	3,130	2,274	2,685	2,292	0.3	0.5	0.4	0.4	0.4	25,192	26,161	25,305	25,716	25,323	4.0	4.1	4.0	4.0	4.0
	PCC		909,569	35,311	3.9	7,527	21.3	1,774	1,329	1,329	1,774	1,329	5.0	3.8	3.8	5.0	3.8	9,301	8,856	8,856	9,301	8,856	26.3	25.1	25.1	26.3	25.1
	RFS		909,569	68,559	7.5	2,712	4.0	251	264	247	283	202	0.4	0.4	0.4	0.4	0.3	2,963	2,976	2,959	2,995	2,914	4.3	4.3	4.3	4.4	4.3
	RCW Habitat	Low	909,569	14,313	1.6	88	0.6	0	0	0	0	0	0	0	0	0	0	88	88	88	88	88	0.6	0.6	0.6	0.6	0.6
		Med	909,569	9,533	1.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		High	909,569	2,139	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Bald Eagle		909,569	303,302	33.3	10,498	3.5	977	927	927	1,764	1,713	0.3	0.3	0.3	0.6	0.6	11,475	11,425	11,425	12,262	12,211	3.8	3.8	3.8	4.0	4.0
	Saint Andrew Beach Mouse Habitat		909,569	2,581	0.3	54	2.1	0	0	0	0	0	0	0	0	0	0	54	54	54	54	54	2.1	2.1	2.1	2.1	2.1
	21 Most Imperiled Species Area		358,619	45,110	12.6	1,738	3.9	0	0	0	0	0	0	0	0	0	0	1,738	1,738	1,738	1,738	1,738	3.9	3.9	3.9	3.9	3.9
EFH	Marsh Emergent Vegetation		703,334	3,889	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Riverine Emergent Vegetation		703,334	422	0.06	3	0.7	0	0	0	0	0	0	0	0	0	0	3	3	3	3	3	0.7	0.7	0.7	0.7	0.7
FNAI Rare Species Habitat Conservation Priorities	Priority 1 (Highest)		909,659	121,208	13.3	1,801	1.5	604	884	289	649	333	0.5	0.7	0.2	0.5	0.3	2,405	2,685	2,090	2,450	2,134	2.0	2.2	1.7	2.0	1.8
	Priority 2		909,659	38,878	4.3	172	0.4	0	0	0	0	0	0	0	0	0	0	172	172	172	172	172	0.4	0.4	0.4	0.4	0.4
	Priority 3		909,659	25,920	2.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Priority 4		909,659	27,473	3.0	1,110	4.0	0	0	0	0	0	0	0	0	0	0	1,110	1,110	1,110	1,110	1,110	4.0	4.0	4.0	4.0	4.0
	Priority 5(Lowest)		909,659	71,610	7.9	703	1.0	0	0	2	0	0	0	0	0.03	0	0	703	703	705	703	703	1.0	1.0	1.0	1.0	1.0
	Total Acres		909,659	285,089	31.3	3,786	1.3	604	884	291	649	333	0.2	0.3	0.1	0.2	0.1	4,390	4,326	4,077	4,435	4,119	1.5	1.5	1.4	1.5	1.4
Ecological Greenways Network Critical Linkages	Critical Linkages 1		909,569	58,279	6.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Critical Linkages 2		909,569	297,898	32.75	64	0.02	0	0	0	0	0	0	0	0	0	0	64	64	64	64	64	0.02	0.02	0.02	0.02	0.02
	Priority 1		909,569	9,648	1.06	25	0.26	0	0	9	0	0	0	0	.09	0	0	25	25	34	25	25	0.26	0.26	0.35	0.26	0.26
	Priority 2		909,569	270,235	29.7	5,308	1.96	380	1,294	380	1,085	1,329	.14	.48	.14	.40	.49	5,688	6,602	5,688	6,393	6,637	2.1	2.4	2.1	2.4	2.5
	Priority 3		909,569	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Priority 4		909,569	10,797	1.19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Priority 5		909,569	3,078	0.34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Priority 6		909,569	55,458	6.09	7,779	14.0	517	241	84	517	200	.93	.43	.15	.93	.36	8,296	8,020	7,863	8,296	7,979	15.0	14.5	14.2	14.2	15.0
	Totals		909,569	705,394	77.6	13,178	1.9	897	1,535	473	1,602	1,529	.13	.22	.07	.23	.22	14,075	14,713	13,651	14,780	14,707	2.0	2.1	1.9	2.1	2.1

The transportation sector is a substantial contributor to GHG emissions in Florida, accounting for about 46 percent of CO_2 emissions statewide. The transportation sector's GHG emissions in Florida are dominated by personal vehicle travel in cars and light trucks, which account for almost two-thirds of these emissions. Other trucks account for an additional 14 percent of CO_2 emissions.

Strategies are being developed and/or implemented at the Federal and State levels to address transportation GHG. Governor Crist established the Action Team on Energy and Climate Change by signing Executive Order 07-128, *Florida Governor's Action Team on Energy and Climate Change*, pm July 13, 2007. A Florida Climate Change Action Plan is being developed that will include strategies to reduce emissions, including recommendations for proposed legislation for consideration by the Florida legislature.

Key Florida strategies for reducing transportation's contribution to GHG emissions include:

- Reducing the rate of fuel consumption by enhancing vehicle efficiency;
- Reducing congestion and delay on the transportation system;
- Reducing the carbon content of fuel, so that fewer emissions are generated for each gallon of fuel consumed;
- Reducing the growth rate in travel by managing travel demand; and
- Expanding options for travel by means other than single-occupant vehicles, and changing land use patterns.

Because climate change is a global issue, and the emissions changes due to project alternatives (including the No Build Alternative) are not different or very small compared to global totals, the GHG emissions associated with the alternatives were not calculated. Because GHGs are directly related to energy use and vehicle miles travelled, the changes in GHG emissions for Build versus No Build alternatives would be similar.

Since climate change is thought to result in a rise in sea levels, an assessment of impacts of sea level rise was conducted. The effects of sea level rise were assumed to be equivalent to the area of induced development within the 500-year floodplain (see the ICE Report prepared for this project). There would be no involvement of the forecasted development under the Build Alternatives future development scenario with the 500-year floodplain; therefore, there would be no indirect effects from sea level rise as a result of climate change within the planning period.

The evaluation of indirect effects on the natural environment included analysis of induced development involvement with wetlands, water quality, floodplains, EFH, and wildlife and habitat.

Due to the limited involvement of the induced development with wetlands (from 0.33 percent to 0.59 percent) and the regulations and permitting requirements that would insure the avoidance, minimization of impacts and mitigation measures prior to development occurring, it was determined that the indirect effects would not be substantial.

The analysis of potential indirect effects on water quality considered the induced developments' involvement with drainage basins for verified impaired waters, involvement with waters classified as Class I, Class II, and Class III, and increases in impervious surfaces. Depending upon the Build Alternative Development Scenario being considered, involvement with the drainage basins for Class I waters ranged from 179 acres to 772 acres, or 0.3 to 1.4 percent of the resource within the PARA, for Class II waters ranged from 367 acres to 1,939 acres, or 0.4 to 1.6 percent of the resource within the PARA, and for Class III waters ranged from 1,038 acres to 1,895 acres, or 0.8 to 1.5 percent of the resource within the PARA.

The induced developments' involvement with the drainage basins of verified impaired waters ranged from 1,602 acres to 2,789 acres. The impaired surface waters are mostly impaired for mercury (in fish tissue) for which the FDEP is developing a statewide TMDL that will have to be met for discharges to be allowed. Other criteria that aren't being met in some waters include: fecal coliforms (in shellfish), Dissolved Oxygen (nutrients), and bacteria (in shellfish). The state has identified the priority for the development of TMDLs for these parameters as medium for Dissolved Oxygen (nutrients), and low for fecal coliforms (in shellfish) and bacteria (in shellfish).

The increase in impervious surfaces from the project induced development would range from 864 acres to 1,462 acres, or 0.3 to 0.5 percent of the total acreage within the water quality PARA. While it is generally accepted that a major contributor to the degradation of surface water quality is the result of increased impervious surfaces, it has also been reported (in *Fragmentation, Impervious Surfaces and Water Quality: Quantifying the effects of density and spatial arrangement*[60]) that "in order to protect water quality and stream function, at least 30 to 50 percent of the watershed should be protected in mature forest stands".

Although the induced development would increase impervious surface, development regulations and permitting requirements in these areas require treatment of runoff prior to discharge. There are occasions when severe storms cause runoff to exceed the capacity of the treatment system (25-year storm); therefore, there could be occasional increases in pollutant loadings in the discharge to surface waters during these events. However, these events are such relatively rare occurrences, that the expense of providing the necessary capacity is not justified for the relatively small benefit treatment obtained. Therefore, it was concluded that although the indirect effects of the induced development could potentially have an effect, the effects were not considered substantial.

The involvement of the induced development in floodplains varied depending upon the Build Alternative under consideration, but ranged from 945 acres (0.25 percent) to 1,543 acres (0.42 percent). Given that the calculated floodplain within the induced development areas is so minor (less than half of one percent), and that actual floodplain impacts will be less than the calculated amount, and that development regulations and permitting requirements require the minimization and mitigation for floodplain encroachment, the potential indirect effects of induced developments under the Build Alternatives would be minimal.

The induced development areas were also evaluated for potential involvement with EFH and although EFH occurs within the study area, none of the induced development boundaries encompasses any of the EFHs. Nor do any of these developments encompass any of the area of the 21 most imperiled species or RCW. They do encompass some of the Florida black bear habitat and some of the PCC habitat. Induced growth involvement with PCC habitat ranges from 1,329 (3.8 percent) to 1,774 acres (5.0 percent) of the available habitat. Since the FFWCC and the USFWS are working with the principal owner of the lands containing the PCC on a candidate conservation agreement with assurances[61], it is assumed that a core population of PCC will be managed in perpetuity to ensure the stability and viability of the species indefinitely. However, should the candidate conservation agreement with assurances fail to be implemented, the loss of habitat would be of concern due to the limited habitat of the PCC. Of much greater concern, is the involvement of the projected development under the No Build Development Scenario, which would encompass 21.3 percent of the available PCC habitat. Since the PCC is not a federally-listed species and a state management plan for the species is only in draft form, it is not possible to determine what measures would be required to mitigate for impacts and, therefore, a determination of the degree of adverse effect cannot be made.

The induced development would encompass between 2,161 acres and 3,884 acres of black bear habitat, depending on the alternative considered. While these impacts are only 0.29 percent to 0.51 percent of the black bear habitat within the PARA, it is the encroachment-alteration effects that are more important.

These were evaluated in several ways. One measure was simply the proximity of the induced development to the East Panhandle (formerly Apalachicola) Bear Management Unit (BMU) with those developments closest to the East Panhandle BMU having greater encroachment-alteration effects on the assumption that these developments

would be more likely to have human-bear interactions. Similarly, those developments most isolated from existing or forecasted development would also have greater potential for human-bear interactions. Another measure that was more easily quantifiable was the induced development's involvement with lands identified as Critical Linkages 2 and Priority 1 in the Florida Ecological Greenways Network. These lands could potentially serve as a corridor the East Panhandle BMU with the Econfina River Water Management Area, a goal of the *Draft Florida Black Bear Management Plan*[62]. The induced development associated with Alternative 15 is the only induced development having involvement with Critical Linkages 2 and Priority 1 lands.

While none of the measures indicated that the induced development would have a substantial impact on the black bear, they did provide indicators of the Build Alternative future development scenarios that would likely have more risk of affecting the black bear. Alternative 14 was the only Build Alternative with a completely isolated development. All alternatives had developments in the Mexico Beach/Wetappo area which is closest to the East Panhandle BMU but these developments are located south and west of the ICWW which can serve as a barrier to bear movements. Alternatives 14 and 19 have development in far eastern and northeastern Bay County, respectively.

Because the magnitude of the encroachment-alternation effects cannot be determined, it is concluded that since none of the induced developments would result in the loss of more than 0.5 percent of bear habitat and that most of the induced development would occur in areas near existing future and/or proposed development rather than close to the East Panhandle BMU, the indirect effects of the induced development would not be substantial.

Based on the foregoing summary of the indirect effects analysis, none of the induced growth under the Build Alternatives would have a substantial indirect effect on the resources within the study area, except perhaps for the PCC if the candidate conservation agreement is not implemented.

4.3.20.4 Summary of Cumulative Effects Analysis

The cumulative effects analysis combines the direct and indirect effects of the project alternatives with the past, present, and reasonably foreseeable future actions of others to determine the cumulative effects on the various resources (see Appendix R for forecasted future actions, including transportation projects listed in the STIP and TIP). As part of the cumulative effects assessment it is necessary to establish the health of the resources being analyzed. Health refers to the general overall condition, stability or viability of the resource. There have been detrimental effects to resources from human actions but in general the condition of the resources is good. (For an explanation of the specific conditions of the various resources in the area please refer to the *Indirect and Cumulative Effects Technical Report*[57] (November 2012), prepared for this project.) This is largely due to relatively rural nature of most of the study area.

Table 4-60 summarizes the quantification of involvement of the forecasted development under the No Build and Build Alternatives future development scenarios combined with the direct effects of the project. What is immediately obvious is that the majority of the cumulative effects would involve less than 10 percent of the resource within the PARA. Exceptions to this are the PCC (PCC) habitat which would lose between 25.2 and 26.7 percent of its habitat. This species, which is only known to exist in Bay County, would be adversely affected by the forecasted future development were it not for the efforts to develop a candidate conservation agreement with assurances[42] with the property owner that would ensure a core population of PCC will be managed in perpetuity.

Other categories from **Table 4-60** that have cumulative effects shown as in excess of 10 percent of the resource are preservation land uses (18.5 percent), new commercial areas (72.0 to 83.7 percent), Class I drainage basins (20.0 to 21.9 percent), and verified impaired waters (9.8 to 10.3 percent). In the case of new commercial areas, the high percentage is a benefit to the local economy. Preservation land uses just indicate that the No Build

Table 4-60: Quantifiable Cumulative Effects on Environmental Resources in 2035

Resource			Total PARA Area (in acres)	Total Resource in PARA (in acres)	Percentage of Resource in PARA area	Acres of Resource Impacted by No Build Future Development	Percentage of Resource Impacted by No Build Future Development	Direct Effects of Build Alternatives on Resource (in acres)					Indirect Effects of Build Alternatives (Induced Development) on Resource (in acres)					Cumulative Effects on Resource (in acres)						Percentage of Resource Affected by Cumulative Impacts				
								8	14	15	17	19	8	14	15	17	19	No Build	8	14	15	17	19	8	14	15	17	19
Land Use Change	Agriculture		612,502	286,667	46.8	18,447	6.4	719	940	1,084	547	726	1,945	3,451	2,695	2,937	3,686	18,447	21,111	22,838	22,226	21,931	22,859	7.4	8.0	7.8	7.7	8.0
	Conservation		612,502	45,867	7.4	1,248	2.7	72	72	72	137	137	0	5	0	0	0	1,248	1,320	1,325	1,320	1,385	1,385	2.9	2.9	2.9	3.0	3.0
	Conservation/Preservation		612,502	92	0.2	17	18.5	0	0	0	0	0	0	0	0	0	0	17	17	17	17	17	17	18.5	18.5	18.5	18.5	18.5
	Totals		612,502	332,626	54.3	19,712	5.9	791	1,012	1,156	684	863	1,945	3,456	2,695	2,937	3,686	19,712	22,448	24,180	23,563	23,333	24,261	6.7	7.3	7.1	7.0	7.3
Economic	Enterprise Zones		612,502	12,789	2.1	854	6.7	92	92	92	17	17	20	20	20	0	0	854	966	966	966	871	871	7.6	7.6	7.6	7.6	7.6
	New Commercial Areas		612,502	3,563	0.6	2,566	72.0	0	0	0	0	0	1,210	1,047	672	1,258	816	2,566	3,776	3,613	3,238	3,824	3,382	82.6	79.0	71.0	83.7	74.0
Civil Rights	Low Income Populations		612,502	110,258	0	0	0	0	0	117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Minority Populations		612,502	2,537	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Farmlands			756,870	19,281	2.5	43	.2	0	0	15	0	0	0	0	0	0		43	43	43	58	43	43	.2	.2	.3	.2	.2
Wetlands			756,870	304,515	40.2	14,478	4.8	340	504	514	439	575	1,073	1,788	997	1,376	1,745	14,478	15,891	16,770	15,989	16,293	16,798	5.2	5.5	5.3	5.4	5.5
Floodplains	100 Year Floodplains		756,870	371,526	49.1	12,675	3.4	366	354	370	202	265	1,001	1,543	1,008	945	1,357	12,675	14,042	14,572	14,053	13,822	14,297	3.8	3.9	3.8	3.7	3.8
	500 Year Floodplains		756,870	3,195	0.4	509	0.2	0	0	0	0	0	0	0	0	0	0	509	0	0	0	0	0	0	0	0	0	0
	Floodways		756,870	2,339	0.3	40	1.7	1	1	1	1	1	0	0	3	0	0	40	41	41	44	41	41	1.8	1.8	1.9	1.8	1.8
Water Quality	New Impervious Surface Area		286,706	N/A	N/A	10,660	3.7	290	279	284	272	262	864	1,462	1,000	1,262	1,085	10,660	11,814	12,401	11,944	12,194	12,008	4.1	4.3	4.2	4.3	4.2
	Verified Impaired Waters		286,706	179,533	62.6	15,153	8.4	651	671	794	600	602	1,727	2,042	1,602	2,789	2,664	15,153	17,531	17,866	17,549	18,542	18,419	9.8	10.0	9.8	10.3	10.3
	Class I Drainage Basin		286,706	56,449	19.7	11,380	20.0	18	84	198	18	84	179	772	603	179	659	11,380	11,577	12,236	12,378	11,577	12,320	20.5	21.7	21.9	20.5	21.8
	Class II Drainage Basin		286,706	102,080	35.6	10,035	9.8	455	527	582	634	663	633	986	367	1,939	1,673	10,035	11,123	11,548	10,984	12,608	12,371	10.9	11.3	10.8	12.4	12.1
	Class III Drainage Basin		286,706	128,176	44.7	5,235	4.1	494	599	541	190	295	1,349	1,895	1,530	1,038	1,552	5,235	7,078	7,729	7,306	6,463	7,082	5.5	6.0	5.7	5.0	5.5
IWHRS	Priority	Percent of Total																										
	1 (Lowest)	7.3	909,569	60,072	6.6	4,361	7.3	100	108	109	112	120	157	161	162	199	198	4,361	4,618	4,630	4,632	4,672	4,679	7.7	7.71	7.71	7.8	7.8
	2	6.3	909,569	51,991	5.7	2,813	5.4	93	81	72	106	106	172	172	154	271	263	2,813	3,078	3,066	3,039	3,190	3,182	5.9	5.9	5.8	6.1	6.1
	3	9.0	909,569	73,632	8.1	6,339	8.6	166	180	177	200	201	612	623	605	622	597	6,339	7,117	7,142	7,121	7,161	7,137	9.7	9.7	9.7	9.7	9.7
	4	14.2	909,569	116,609	12.8	8,653	7.4	210	297	255	109	178	501	836	388	796	929	8,653	9,364	9,786	9,296	9,558	9,760	8.0	8.4	8.0	8.2	8.4
	5	22.5	909,569	184,832	20.3	5,203	2.8	232	244	302	214	238	607	886	1,043	1,138	1,322	5,203	6,042	6,333	6,548	6,555	6,763	3.3	3.4	3.5	3.6	3.7
	6	17.2	909,569	140,926	15.5	2,532	1.8	155	242	274	50	112	109	746	151	124	366	2,532	2,796	3,520	2,957	2,706	3,010	2.0	2.5	2.1	1.9	2.1
	7	13.5	909,569	110,511	12.2	1,207	1.1	7	44	78	0	27	2	139	28	6	122	1,207	1,216	1,390	1,313	1,213	1,356	1.1	1.26	1.2	1.1	1.23
	8	8.2	909,569	67,296	7.4	117	0.2	0	11	46	0	10	0	91	1	0	86	117	117	219	164	117	213	.17	.33	.24	.17	.32
	9	1.8	909,569	14,695	1.6	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	.03	0	0
	10(Highest)	0.0	909,569	562	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Acres	100.0	909,569	821,126	.90	31,225	3.8	963	1,207	1,317	791	992	2,160	3,654	2,532	3,156	3,883	31,225	34,348	36,086	35,074	35,172	36,100	4.2	4.4	4.3	4.3	4.4
Wildlife Habitat	Pinelands		909,569	368,497	40.5	14,001	3.8	604	715	862	479	579	968	1,667	1,515	1,771	1,597	14,001	15,573	16,383	16,378	16,251	16,177	4.2	4.4	4.4	4.4	4.4
	Beach and Marine		909,569	8,807	1.0	501	5.7	11	11	11	1	1	0	0	0	0	0	501	512	512	512	502	502	5.8	5.8	5.8	5.7	5.7
	Wading Birds		909,569	147,761	16.2	3,637	2.5	39	53	53	50	64	504	735	546	489	489	3,637	4,180	4,425	4,236	4,176	4,190	2.8	3.0	2.9	2.8	2.8
	Black Bear		909, 569	637,383	70.1	23,031	3.6	669	909	961	468	661	2,161	3,130	2,274	2,685	2,292	23,031	25,861	27,070	26,266	26,184	25,984	4.1	4.2	4.1	4.1	4.1
	PCC		909,569	35,311	3.9	7,527	21.3	126	44	44	126	44	1,774	1,329	1,329	1,774	1,329	7,527	9,427	8,900	8,900	9,427	8,900	26.7	25.2	25.2	26.7	25.2
	Flatwoods Salamander		909,569	68,559	7.5	2,712	4.0	48	58	47	52	62	251	264	247	283	202	2,712	3,011	3,034	3,006	3,047	2,976	4.3	4.4	4.4	4.4	4.3
	RCW Habitat	Low	909,569	14,313	1.6	88	0.6	155	155	155	37	37	0	0	0	0	0	88	243	243	243	125	125	1.7	1.7	1.7	.9	.9
		Med	909,569	9,533	1.0	0	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		High	909,569	2,139	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Bald Eagle		909,569	303,302	33.3	10,498	3.5	269	269	261	434	452	977	927	927	1,764	1,713	10.498	11,744	11,694	11,686	12,696	12,663	3.9	3.9	3.9	4.2	4.2
	Saint Andrew Beach Mouse Habitat		909,569	2,581	0.3	54	2.1	0	0	0	0	0	0	0	0	0	0	54	54	54	54	54	54	2.1	2.1	2.1	2.1	2.1
	21 Most Imperiled Species		358,619	45,110	12.6	1,738	0.48	40	40	40	0	0	0	0	0	0	0	1,738	1,778	1,778	1,778	1,738	1,738	3.9	3.9	3.9	3.9	3.9
EFH	Marsh Emergent Vegetation		703,334	3,889	0.6	0	0	10	10	10	51	51	0	0	0	0	0	0	10	10	10	51	51	0.25	0.25	0.25	1.3	1.3
	Riverine Emergent Vegetation		703,334	422	0.06	3	0.7	0	0	0	0	0	0	0	0	0	0	3	3	3	3	3	3	0.7	0.7	0.7	0.7	0.7
FNAI Rare Species Habitat Conservation Priorities	Priority 1 (Highest)		909,569	121,208	13.3	1,801	1.5	0	0	0	0	0	604	884	289	649	333	1,801	2,405	2,685	2,090	2,450	2,134	2.0	2.2	1.7	2.0	1.8
	Priority 2		909,569	38,878	4.3	172	0.4	31	22	18	25	47	0	0	0	0	0	172	203	194	190	197	219	0.5	0.5	0.5	0.5	0.6
	Priority 3		909,569	25,920	2.8	0	0	187	247	183	280	421	0	0	0	0	0	0	187	247	183	280	421	0.7	1.0	0.7	1.1	1.6
	Priority 4		909, 569	27,473	3.0	1,110	4.0	263	245	166	287	341	0	0	0	0	0	1,110	1,373	1,355	1,276	1,397	1,451	5.0	4.9	4.6	5.1	5.3
	Priority 5(Lowest)		909,569	71,610	7.9	703	1.0	454	375	547	228	159	0	0	2	0	0	703	1,157	1,078	1,252	931	862	1.6	1.5	1.7	1.3	1.2
	Total Acres		909,569	285,089	31.3	3,786	1.3	936	889	914	820	968	604	884	291	649	333	3,786	4,390	4,670	4,991	5,255	5,087	1.5	1.6	1.8	1.8	1.8
Ecological Greenways Network Critical Linkages	Critical Linkages 1		909,569	58,279	6.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Critical Linkages 2		909,569	297,898	33.0	64	0.02	212	212	465	0	0	0	0	0	0	0	64	276	276	529	64	64	0.09	0.09	0.18	0.02	0.02
	Priority 1		909,569	9,648	1.1	25	0.26	0	0	0	0	0	0	0	9	0	0	25	25	25	34	25	25	0	0	.35	0	0
	Priority 2		909,569	270,235	29.7	5,308	1.96	404	597	469	364	514	380	1,294	380	1,085	1,329	5,308	6,092	7,199	6,157	6,757	7,151	2.2	2.7	2.3	2.5	2.6
	Priority 3		909,569	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Priority 4		909,569	10,797	1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Priority 5		909,569	3,078	.34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Priority 6		909,569	55,458	6.1	7,779	14.0	82	7	7	82	7	517	241	84	517	200	7,779	8,378	8,027	7,870	8,378	7,986	15.1	14.5	14.2	15.1	14.4
	Totals		909,569	705,394	77.6	13,178	1.9	699	814	943	446	521	897	1,535	473	1,602	1,529	13,178	14,774	15,530	14,594	15,226	15,228	2.1	2.2	2.1	2.2	2.2

T – Threatened Species
E – Endangered Species
SSC – Species of Special Concern

development would encompass these sites. Bay County land development regulations do not allow development on lands designated for preservation, therefore, where preservation occurs on a development site, it would remain in preservation. Involvement with verified impaired waters is strictly an indicator of the amount of development falls within the drainage basins of verified impaired waters. **Table 4-60** provides the estimated impervious surface area for the No Build and the Build alternatives, the induced growth, and the reasonably foreseeable future actions of others. This analysis does not indicate how close to the impaired waters the forecasted development is nor how effective stormwater treatment systems will be in controlling pollutants from entering the impaired waters. An analysis of increased impervious surfaces was also performed to determine if the increase within the drainage basins would be of sufficient amount to affect the ability to maintain or improve water quality in the surface waters. The total impervious surface cover added ranged from 10,660 acres for the No Build Alternative Future Development Scenario to 12,194 for Alternative 17 Future Development Scenario. This range increased impervious surfaces by 3.7 to 4.3 percent of the study area. An evaluation by drainage basin (**Table 4-61**) showed that increases in impervious surfaces ranged from 0.6 to 20.1 percent of the drainage basin area. All other resource categories evaluated had less than 10 percent cumulative involvement with the resource and therefore were not considered substantially affected.

One other not so obvious, but equally important, conclusion is that the majority of the cumulative effects (80 to 90 percent) are the result of forecasted development under the No Build Alternative that would occur without the project. Therefore, while the direct and indirect effects of the project contribute to the overall cumulative effects experienced by the resources in the study area, it is the growth in the area with or without the project that constitutes the primary threat to any individual resource.

Table 4-62 summarizes the significance of the cumulative effects on the resources in general.

Table 4-61: Increased Impervious Surface Cover for the No Build and Build Future Development Scenarios by Drainage Basin within the Water Quality PARA

Drainage Basin	Basin Area (in acres)	Impacted Area (in acres)	Impervious Surface Cover by Alternative											
			No Build		8		14		15		17		19	
			Acres	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
Bayou George Creek	27638	8855	3542	12.8	72	13.1	309	13.9			72	13.1		
Bear Branch	24985	331	132	0.5					52	0.7				
Beefwood Branch	2460	820	328	13.3										
Big Branch	1510	195	78	5.2			219	19.7						
Boggy Creek	3163	303	121	3.8										
California Bayou	5631	770	308	5.5										
Callaway Bayou	10717	3823	1529	14.3	147	15.6	147	15.6	147	15.6	147	15.6	147	15.6
Clear Creek	3562	84	37	0.9					39	2.1				
Deer Point Lake	5930	1918	767	12.9										
Direct Runoff to Bay	6146	790	316	5.1										
Direct Runoff to Bay	5362	93	37	0.7										
Gude Branch	1418	0	0	0.0	45	3.2	45	3.2	45	3.2				
Gulf of Mexico	34008	14	6	0.0										
Horseford Branch	1410	217	87	6.1					93	12.8				
Horseshoe Creek	5533	5	2	0.0										
Island Branch	1073	164	65	6.1										
Joe Lamb Branch	2760	247	99	3.6										
Laird Bayou	13882	2203	881	6.3			169	7.6			504	10.0	504	10.0
Lake Martin Drain	3330	147	59	1.8										
Little Bear Creek (South Fork)	3330	277	111	3.3					189	9.0				
Little Creek	9769	2	1	0.0										
Mill Bayou	6887	1385	554	8.0	50	8.8					50			
Minge Branch	1210	465	186	15.4	57	20.1					57	20.1		
Mule Creek	1406	0	0	0.0			6.6							
North Bay (N. Seg. 2)	2116	456	182	8.6										
Panther Swamp	36991	492	197	0.5	109	0.8	109	0.8	50	0.7	30	0.6	30	0.6
Parker Creek	3075	175	70	2.3	385	14.8	385	14.8	385	14.8	385	14.8	385	14.8
Salt Creek Drain	2708	492	197	7.3										
Unnamed Creek	2390	0	0	0.0			72	3.0			19	3.0	19	3.0
Wetappo Creek	42756	1929	772	1.8										

Table 4-62 Significance of Cumulative Effects

ENVIRONMENTAL RESOURCE OF CONCERN	IMPACT OF PAST AND PRESENT ACTIONS	IMPACT OF NO BUILD FUTURE DEVELOPMENT	IMPACT OF BUILD ALTERNATIVES INDUCED DEVELOPMENT	DIRECT IMPACT OF THE GULF COAST PARKWAY CONSTRUCTION	CUMULATIVE EFFECTS
Wetlands	Study area wetlands have been affected by past activities, including drainage of wetlands for silviculture, untreated stormwater runoff, filling of wetlands for residential and commercial development, and construction activities associated with road improvements.	The actual impacts of future development cannot be accurately identified; therefore, the estimated 14,478 acres of "impacts" is the area of wetlands occurring within the boundaries of the forecasted future developments. This estimate also does not consider the avoidance, minimization, and mitigation for wetland impacts that would be required before construction would be permitted. Most of the development under this scenario would be low density residential and mixed use with some commercial. Potential impacts to the wetlands include filling of wetlands; increased erosion, sedimentation and runoff from additional impervious surfaces; loss of hydrologic connections, invasion by non-native species, and increased concentrations of chemicals such as nitrogen, phosphorus, and heavy metals.	Involvement with wetlands from the induced development occurring under the Build Alternatives future development scenario would range from 997 acres to 1,788 acres depending on the Build Alternative. This is the area of wetlands within the boundaries of the induced development sites and does not consider avoidance, minimization or mitigation for impacts. Most of the development under this scenario would be low density residential and mixed use with some commercial use. Potential impacts to wetlands include filling of wetlands; increased erosion, sedimentation and runoff from additional impervious surfaces; loss of hydrologic connections, invasion by non-native species, and increased concentrations of chemicals such as nitrogen, phosphorus, and heavy metals.	Estimated direct impacts to wetlands range from 340 acres to 575 acres, depending upon the alternative. Potential impacts to wetlands include filling of wetlands and invasion by non-native species, and increased pollutants entering adjoining wetlands. Potential erosion and sedimentation will be handled during construction with BMP and FDOT standard construction measures. Hydrologic connections will be maintained with appropriately sized cross drains. Increased runoff will be collected and treated in stormwater management facilities. Invasion by non-native species will be controlled by mowing of right-of-way. Potential filling of wetlands will be subject to further minimization during design and mitigation will be provided for any unavoidable impacts.	The cumulative involvement with wetlands would range from 15,891 to 16,798 acres. Approximately 90 percent of these impacts would accrue from future development that would occur without the construction of the Gulf Coast Parkway. Further, avoidance, minimization and mitigation would be required before construction would be permitted, reducing the actual impacts. Therefore, it is concluded that with mitigation there will be an impact to, but no significant adverse effect, on wetlands.
Floodplains	Most existing development is located outside the 100-year and 500-year flood area. The major concentration of 100-year floodplain is in southern Gulf County and along waterways, such as East Bay and North Bay.	The estimated 12,675 acres of 100-year floodplain involvement under the No Build future development scenario is the area of floodplain within the boundaries of the development sites and not actual filling in floodplains. Any future development will be in accordance with the adopted Bay or Gulf County Comprehensive Plans and the implementing Land Development Regulations, which, in compliance with the National Flood Insurance Program, prohibit development in the base floodplain. The land development regulations also require	Involvement with floodplains from the induced development occurring under the Build Alternatives future development scenario would range from 945 acres to 1,543 acres depending on the alternative being considered. This estimate is the amount of 100-year floodplain within the boundaries of the development sites and not actual impacts. Any development would be required to comply with the local land development regulations which prohibit development in the base floodplain and require stormwater	The estimated direct impacts on the 100-year floodplain by the Build Alternatives vary from 202 acres to 370 acres. However, the proposed project includes construction of stormwater ponds to control the rate of runoff to prevent flooding that would otherwise result from this filling within the 100-year floodplain and the addition of impervious surfaces. In addition, the design of the project will include the sizing of cross drains to allow better flow of stormwater during severe storm events	The estimated cumulative involvement with the 100-year floodplain ranges from 13,822 acres to 14,572 acres, depending on the alternative. From 87 to 91.7 percent of the involvement with the 100-year floodplain would occur under the No Build Alternative future development scenario. Since any impacts to the 100-year floodplain will be mitigated, there would be no adverse cumulative

ENVIRONMENTAL RESOURCE OF CONCERN	IMPACT OF PAST AND PRESENT ACTIONS	IMPACT OF NO BUILD FUTURE DEVELOPMENT	IMPACT OF BUILD ALTERNATIVES INDUCED DEVELOPMENT	DIRECT IMPACT OF THE GULF COAST PARKWAY CONSTRUCTION	CUMULATIVE EFFECTS
		the provision of stormwater ponds to control the rate of runoff to prevent flooding as a result of filling in floodplain areas and the addition of impervious surfaces.	ponds to control the rate of runoff to prevent flooding as a result of filling in floodplain areas and the addition of impervious surfaces.		effects on floodplains.
EFH	EFH is present predominantly in East Bay and some of the rivers entering the bay. There are no Habitats of Particular Concern. Conditions are generally good in these areas.	Forecasted development under the No Build future development scenario would have involvement with 3 acres of riverine emergent vegetation. This is not a direct impact but the area of this type of habitat within the future development sites boundaries. It is not expected that any construction would actually occur within the EFH. The most likely threat to EFH is contaminants from non-point sources entering the water bodies and human disturbance of habitats by wading in the water's edge or the effects of boats' wakes.	There would be no direct involvement with EFH from the induced developments under the Build Alternatives future development scenarios. The increased population would increase the potential for non-point source pollution and human disturbance of EFH habitats by wading in the water's edge or the effects of marine craft.	Build Alternatives 8, 14, and 15 would have 10 acres of impact to Marsh Emergent EFH and Alternatives 17 and 19 would have 51 acres of impact to EFH. Mitigation would be provided for these impacts.	Since mitigation would be provided for direct impacts to EFH, the impacts of the project are expected to have effects on EFH but no significant adverse effects to EFH.
Water Quality	The dominant surface water features in the study area are the Deer Lake Reservoir and East Bay. Water quality is generally good although the presence of mercury in fish has been identified in the Gulf of Mexico. There are seven waterbodies on the list of potentially impaired waters, mostly for dissolved oxygen and nutrients. Many of the existing roadways in the study area do not have a stormwater collection and treatment system, so stormwater runoff from the roadway contributes to the nonpoint sources of contamination to these waters.	Forecasted development under the No Build Alternative would increase impervious surfaces (10,660 acres). However, current regulations requiring the collection and storage of stormwater would help minimize the potential for increased runoff and provide some treatment of pollutants in runoff.	Induced development under the Build Alternatives would increase impervious surfaces (from 864 acres to 1,462 acres, depending on the alternative). The most substantial increase in impervious surfaces (approximately 20 %) would occur under Alternatives 8 and 17 in the Minge Branch drainage basin. Other drainage basins have fewer increases in impervious surfaces. It is difficult to predict the effect on water quality since development plans are unknown but the overall increase in impervious surfaces, except for the Minge Branch drainage basin, is not substantial. Further, much forested land would remain to protect surface waters, and the new developments at a minimum would be required to provide the collection and storage of stormwater prior to	Potential impacts of the project include increased highway runoff due to increased impervious surface (from 263 acres to 290 acres depending on the alternative). Contaminants in stormwater runoff include sediments, metals from vehicular wear, particulates from vehicle exhaust, and petroleum products related to vehicular motor operation. These would be expected to increase with the increased traffic. The proposed project includes a stormwater collection and treatment system that will retain stormwater for a period to allow contaminants to settle before discharge to surface waters. This system will also be designed to attenuate the increased volume of runoff resulting from the new	Total increases in impervious surface area are estimated to be between 11,814 and 12,401 acres, depending on the alternative). With the continued implementation of stormwater programs and permitting by local, regional, and state agencies, water quality conditions should generally be maintained. The additional runoff from the new impervious surfaces should be treated prior to discharge to surface waters minimizing the cumulative effects of the development in the area. The direct effects of the project's construction, which includes the

ENVIRONMENTAL RESOURCE OF CONCERN	IMPACT OF PAST AND PRESENT ACTIONS	IMPACT OF NO BUILD FUTURE DEVELOPMENT	IMPACT OF BUILD ALTERNATIVES INDUCED DEVELOPMENT	DIRECT IMPACT OF THE GULF COAST PARKWAY CONSTRUCTION	CUMULATIVE EFFECTS
			discharge reducing some of the adverse effects on surface water quality.	impervious surfaces.	collection and treatment of stormwater runoff, would be a minor component of the water quality effects of future development in the area.
Wildlife and Habitat	Conversion of natural forest cover to pine plantation has reduced the diversity of cover, food, and breeding areas available to diverse wildlife populations. Development on the boundaries of Wildlife and Habitat PARA has introduced indirect impacts including human presence, domestic pets (as predators), the introduction of exotic species, and the dangers to wildlife associated with roads.	Forecasted development under the No Build Alternative future development scenario would have involvement with 31,225 acres of IWHRS habitats. Although most (88%) of the involvement with IWHRS habitats is with habitats of less than intermediate quality (Priority 5 and below). The forecasted development would still result in further loss and/or fragmentation of habitats, conversion of undeveloped areas to buildings and parking lots, and increased presence of human activity. Disturbances of this type tend to further decrease the numbers and diversity of wildlife within the total area; however, through the diligent application of Land Development Codes, comprehensive planning, and permitting, impacts should be minimized.	Induced development under Build Alternatives would result in the loss of from 2,160 acres to 3,883 acres of IWHRS habitats, depending on the alternative. Although most of the involvement with these habitats is with habitats of less than intermediate quality (Priority 5 and below), the forecasted development would still result in further loss and/or fragmentation of habitats, conversion of undeveloped areas to buildings and parking lots, and increased presence of human activity. Disturbances of this type tend to further decrease the numbers and diversity of wildlife within the total area; however, through the diligent application of Land Development Codes, comprehensive planning, and permitting, impacts should be minimized.	The direct involvement of the project with IWHRS habitat would range from 791 acres to 1,317 acres, depending on the alternative. Although most of the involvement with these habitats is with habitats of less than intermediate quality (Priority 5 and below), the forecasted development would still result in further loss and/or fragmentation of habitats. Wildlife crossings are proposed to facilitate the movements of species under the road. Conservation measures would be provided for impacts to protected species.	The cumulative involvement with IWHRS habitats would vary from 34,348 acres to 36,100 acres, depending on the alternative. The majority of these impacts (87% to 91%) are the result of the No Build Alternative forecasted development and would occur without the project. The total loss of IWHRS habitats is from 4.2 to 4.4 percent. Of these impacts, 86 to 89 percent occur in habitats of less than intermediate quality. Most impacts to the individual species' habitats are less than 5% of the species' available habitat. The exception to this is the PCC habitat. Approximately 25 to 27% of PCC habitat would be lost to cumulative effects. If the habitat conservation agreement that would protect these species is not enacted, then the cumulative effects would create a substantial risk of an adverse effect on the PCC habitat.

4.3.20.1 Mitigation Opportunities

Mitigation measures for cumulative effects to resources are not intended to be implemented by the project sponsor, or even land developers (unless permitting requirements were to change at some future date). The mitigation measures suggested here are intended to disclose or suggest actions that could be undertaken by local, state or federal agencies and organizations that would minimize potential cumulative effects on at-risk resources or reduce or alter the course of a negative trend during or before future development causes further harm.

To a large extent such measures have already been identified and are even being implemented, such as the prioritization of rare species habitat for purchase for conservation purposes, or development of conservation agreements between public and private partners. The problems facing these programs are principally related to the availability of adequate funding for the purchase of high priority lands. Given the current economic climate and the need to provide a balanced budget, there is great risk of funding being curtailed and even cancelled. This; however, should only be a temporary setback in the continuance of the program, as once economic conditions return to normal, funding would mostly likely be reinstituted.

One aspect of the current economic climate is that the downturn in the housing market means there will be more than an adequate supply of housing and commercial properties available for future years. This does not mean no development would occur but much of any new development that does occur will be in areas where new developments have already received permits and are only waiting for the demand to develop.

Of all the resources evaluated in the ICE analysis, the most threatened resource is the PCC due to its extremely limited habitat. The projected cumulative effects over the planning period would result in the loss of a quarter of its habitat. This level of impact presents a real threat to the continued existence of the PCC, however, such impacts could be ameliorated by developing and implementing a candidate conservation agreement. The likelihood of such an agreement being reached was at one time quite good. But, that opportunity may be less likely due to the residual effects of the 2008 economic recession.

Surface water quality is also a concern. The water quality concerns are more of an issue because of existing conditions than due to the projected future development. There are 179,533 acres within the water quality PARA that drain to waterways that are currently verified "impaired" for at least one parameter. Although existing future development will increase impervious surfaces in the study area, most drainage basins should continue to have the 30 to 50 percent forested land needed to maintain water quality. Current developed areas on the western and northern limits of the water quality PARA do not meet this criterion and would need additional measures to offset the effects of the increased impervious surface cover. Stormwater treatment helps, but alone is not considered adequate. Therefore, local governments should institute additional measures in their land development codes. Some recommended measures, such as requiring riparian buffers are already being implemented. Another measure is to require utilization of the cluster development pattern which has been shown to be more effective than traditional development patterns in reducing adverse effects on water quality. A third measures which may be more difficult for local governments to implement would be the analysis of drainage basins within their jurisdiction to determine the optimum locations for developments to minimize impacts to surface waters. The likelihood of this occurring in the near future is not very likely. Besides the expense of such a program, it is less effective when the surface waters cross jurisdictional boundaries. This suggests the analysis would be more appropriate for a state or regional agency, but these agencies do not have the ability to implement land development regulations. Therefore, for this measure to be an effective tool it will require the cooperation of state, regional and local agencies, as well as the public.

What may be useful to those responsible for protecting the state's resources, is the creation of regional databases containing information from in ICE analyses. Over time, such a database could determine the accuracy of the methods utilized in conducting indirect and cumulative analysis and in identifying and evaluating impacts with the purpose of taking those that are most effective and providing them to the preparers of these analysis to

improve them. The techniques could also be helpful to local planners when evaluating policies and goals of local comprehensive plans or in evaluating the acceptability of proposed development plans.

Data from multiple ICE analyses would permit a state or regional agency to tract impacts to resources on a regional basis and identify when resources may be at risk of reaching a point of no return before such point is reached. The database would also be useful when priorities are reviewed for the purchase of conservation lands.

Greater coordination among local, regional, and state agencies is conducive to establishing a regional approach to meeting needs, such as water supply, and protecting resources. But only local governments with large populations have the resources to implement some of the measures necessary to meeting regional goals. Therefore, state and regional agencies should work to assist those communities without the necessary resources to obtain grants to implement long-term goals.

To some extent this is already occurring. Regional planning agencies assist smaller counties and communities with preparing comprehensive plans to provide goals and policies these communities can implement consistent with the state comprehensive plan. The NWFWMD has developed regional water supply plans for each of the regions within its boundaries, which provide an evaluation of each region's water supply needs for the future and identification of sources of supply.

Public education is an on-going but vital measure to protecting resources. While the loss of habitat is probably the single most significant impact on a number of resources, there are other effects that are less obvious but equally as damaging, such as nonpoint source pollution. Public awareness of the affect of their actions is but the first lesson. It is important to provide the public with alternatives to their behavior to ensure detrimental behavior is replaced with that more respectful of the environment.

4.3.21 Construction

Construction activities for the project may have short-term air, noise, vibration, water quality, traffic flow, and visual effects for those residents and travelers within the immediate vicinity of the project. The following discussing the measures that will be taken to minimize construction impacts.

Socioeconomics, Communities and Neighborhoods

The extent of potential construction effects will depend largely on the alternative selected. In any case, FDOT's *Standard Specifications for Road and Bridge Construction* and BMP will be utilized to reduce noise, traffic delays, air quality impacts and other issues that would impacts resident's quality of life. Types of measures that would be implemented are discussed in more detail below, but could include storage of materials out-of-site, coordinating with public service and utility providers to minimize disruption in the delivery of services, confining work to daylight hours, minimizing fugitive dust, requiring noise controls on equipment, and implementing a traffic control plan to minimize possible delays.

Community Services

Construction activities could result in temporary lane closures on some roads, potentially increasing congestion and slowing emergency response times. Therefore, the contractor will be required to coordinate construction activities that affect existing roads with emergency service providers and notify fire departments of any waterline relocations that may affect water supply for fire suppression. In addition, the contractor will be required to coordinate with school officials to minimize delays on school bus routes.

Utilities

Much of the project is on new alignment, but in areas where existing roads are incorporated into the project, utilities could be affected by some construction activities such as earth moving and pile driving. As a result, there may be a need to temporarily re-route utility lines or cables. Such relocations may result in intermittent and short-term interruption of service. Prior to construction, coordination will be conducted with utility providers to minimize any disruption in service.

Railroads

FDOT will notify the Bay Line Railroad in advance of pending construction activities in the vicinity of the railroad during the project's construction.

Air Quality

The air quality effect of highway construction activities will be temporary and will primarily be in the form of emissions from diesel-powered construction equipment and dust from embankment and haul road areas. Air pollution associated with the creation of airborne particles will be effectively controlled through the use of watering or the application of other controlled materials in accordance with FDOT's *Standard Specifications for Road and Bridge Construction*.

Noise and Vibration

Noise and vibration effects may result from heavy equipment movement and construction activities, such as bridge pile driving and vibratory compaction of embankments. Noise control measures will include those contained in FDOT's *Standard Specifications for Road and Bridge Construction*. Specific noise-level problems that may arise during construction of the project will be addressed by the Construction Engineer in cooperation with the appropriate Environmental Specialist.

Noise and vibration effects on fish from pile driving may be managed with one of the following measures,

1) Use of wood or concrete piles instead of hollow steel piles.
2) If using hollow steel piles, restrict their installation to a time of year when larval and juvenile stages of fish species with designated EFH are not present; drive piles during low tide periods when located in intertidal and shallow subtidal areas; use a vibratory hammer as much as possible; monitor peak SPL during pile driving to ensure that they do not exceed the 190 dB re 1PA threshold for injury to fish; employ measures to attenuate sound should SPLs exceed 180 dB re 1 PA (i.e. air bubble curtain system or air-filled coffer dam, use of a smaller hammer, and use of a hydraulic hammer if impact driving cannot be avoided); and drive piles when the current is reduced in areas of strong current.
3) Use of the construction technique called "ramping up" which requires the contractor to use soft-start procedures where the hammer is not used at full strength at the start of a pile driving session.

The need for these measures will be further evaluated during the project's design and special provisions may be added to the project's construction specifications, as appropriate.

Wetlands

Construction activities have the potential for short-term, temporary impacts on wetlands. FDOT will address the potential effects of construction activities on wetlands in accordance with FDOT's most current edition of *Standard Specifications for Road and Bridge Construction* and through the use of BMPs at wetland, bay and stream crossings. Some typical measures include the covering stockpiled materials; locating staging and stockpiling areas sufficiently distant from surfaces waters; limiting the area of exposed soil at any given time during construction; controlling erosion and sedimentation through mulching, matting, and netting; use of filter fabric fencing to prevent sediment from leaving the construction site; placement of rock entrance mats to reduce tracking of dirt from construction vehicles; use of sediment traps and ponds and installation of swales and ditches to intercept runoff; and regular site maintenance to prevent the accumulation of debris. The Engineer may require the use of additional erosion and sedimentation control features or methods not specified in the plans to address unanticipated conditions.

Essential Fish Habitat

Construction activities could have short-term, temporary impacts on EFH, such as increased sediment loads in stormwater runoff from the construction site and increased turbidity during in-water work. Both of these contribute to impacts on benthic aquatic habitats.

The contractor shall be required to develop, implement and adhere to a "marine resource protection plan" to ensure that marine resources within and outside of the right-of-way are not damaged by construction activities. This plan may involve strategies such as marking off adjacent marine resources outside of the proposed project's alignment with buoys, so that construction related boat traffic does not affect adjacent marine resources, i.e., emergent vegetation, seagrass, etc., and barges are not moored directly on or over marine resources. Consideration should be taken to implement strategies to reduce impacts to the existing EFH resources, where possible. For instance, depending on the specific construction activities chosen for this area, some debris (concrete and woody debris) associated with oyster resources may need to be removed for public safety considerations. Impacts such as these should be considered in the overall proposed methodology.

Appropriate construction controls and BMPs will be implemented to ensure protection of marine resources. Construction BMPs should incorporate, but not be limited to: working within adjacent areas devoid of marine resources, instituting BMPs to reduce direct impacts to emergent marsh systems, adequate turbidity controls, utilizing vessels that can operate in depths adequate enough to not scour or prop scar the marine sediments/resources, continual monitoring for presence of wildlife species in the work area, and removal of all construction debris and equipment at completion of the project.

Although not anticipated, if explosives should be utilized during construction activities, then the *Guidelines for the Protection of Manatees and Sea Turtles during the Use of Explosives in the Waters of the State of Florida* should be implemented. The Manatee Construction Conditions set forth by the FFWCC and the USFWS must be followed throughout a construction process. Monitoring for such species shall be conducted throughout the construction process to ensure BMP are being followed.

Water Quality

Construction activities have the potential for short-term, temporary impacts on water quality. FDOT will address the potential effects of construction activities on water quality in accordance with FDOT's most current edition of *Standard Specifications for Road and Bridge Construction* and through the use of BMP. The Engineer may require the use of additional erosion and sedimentation control features or methods not specified in the plans to address unanticipated conditions

Wildlife and Habitat

Construction activities could have air, noise, and water quality impacts on wildlife and associated habitats within the immediate vicinity of the project. The measures proposed to minimize these effects on humans will also improve conditions for wildlife.

A number of actions will be undertaken to avoid or minimize impacts to federally-listed species. These include:

- Conducting pre-construction surveys at appropriate times for listed species to enhance assessments concerning location and population status. For example, since gopher tortoise burrows and habitat found within the alternatives and associated 300-foot buffers may be impacted, FFWCC Gopher Tortoise Permitting Guidelines pertaining to surveying, excavating, and relocating will be followed once a preferred alternative is selected.

- If seasonally-appropriate surveys for federally-listed plants potentially associated with the preferred alternative are conducted, the project sponsor will also consider and avoid potential impacts to state-listed plants, where practical.

- Avoiding potential impacts to manatees. Depending upon the methodology used for bridge installation, potential protection measures could include stopping work if a manatee comes within a specified distance of in-water work, posting observers to watch for manatees, and/or monitoring turbidity barriers for potential entanglement. *Standard Manatee Conditions for In-Water Work, 2011*, developed by the FFWCC and the USFWS will be followed, as necessary. If explosives are to be utilized, *then the Guidelines for the Protection of Manatees and Sea Turtles during the Use of Explosives in the Waters of the State of Florida* will also be implemented.

- Minimizing direct/indirect wetland impacts, e.g., sedimentation, by utilizing appropriate stormwater design and BMP at wetland and stream crossings during construction. Regulatory agencies will have the opportunity to review 60 percent plans that will include proposed design for crossing structures via the joint ERP application. The 60 percent plans submitted with the ERP application will also contain a design erosion control plan that will be subject to regulatory agency review and comment. Design plans will follow the NWFWMD regulations requiring that an operating permit be obtained for the constructed stormwater facilities.

- Per the suggestion of the USFWS, a survey for bald eagle nests within the preferred alternative and associated buffers will be conducted one year prior to construction.

- Implementing *Standard Protection Measures for the Eastern Indigo Snake* during construction.

- Implementing *Construction Special Provisions Gulf Sturgeon Protection Guidelines* during construction.

- Invasive/exotic species will be managed and controlled in accordance with FDOT's *Standard Specifications for Road and Bridge Construction* and through the use of BMP. The contractor will be required to monitor turf areas and remove all competing vegetation, pest plants and noxious weeds as listed by the Florida Exotic Plant Pest Council, Category 1 *List of Invasive Species*. Insecticides and herbicides used to control invasive/exotic species will be approved by the Florida Department of Agriculture.

- Wildlife passages may be provided to reduce habitat fragmentation and limit roadway mortality. Wildlife passages would be installed in appropriate locations in accordance with FDOT *Wildlife Crossing Guidelines*

- All Reasonable Assurance measures will be met as previously described in Section 4.14.

Contamination

Procedures specifying the contractor's responsibilities in regard to encountering petroleum contaminated soil and/or groundwater are set forth in the FDOT's *Standard Specifications for Road and Bridge Construction*. Resolution of problems associated with contamination will be coordinated with appropriate regulatory agencies and, prior to right-of-way acquisition, appropriate action will be taken, prior to construction.

Navigation

Should the bridge construction require in-water work, there could be a potential for conflicts between construction activities and vessels on the waterway. Activities that could result in blockage of a channel or interrupt traffic flow are required to obtain authorization from the USCG. FDOT *Standard Specifications for Road and Bridge Construction* requires under Section 103-1.3 that the USCG be provided 60 days in advance with drawings showing the location of temporary work structures relative to the navigable waterway, lighting on the temporary work structures that meets the USCG requirements, and notification to mariners of construction in or near the navigation channel. These measures should be sufficient to minimize conflicts between bridge construction activities and vessels navigating the either the ICWW through East Bay or the ICWW/Wetappo Creek.

FDOT will work closely with the USCG to ensure that this project meets all navigational requirements and that the bridge is constructed in a manner that will meet the needs of waterway users. FDOT will meet with the USCG to explain in more detail its plans concerning the bridge and to fully accommodate USCG requirements. FDOT will utilize Section – 103-1.3 of the *Standard Specifications for Road and Bridge Construction* to minimize conflicts between construction activities and waterway users.

Maintenance of Traffic

Maintenance of traffic and sequence of construction will be planned and scheduled to minimize traffic delays throughout the project. Signs will be used to provide notice of road closures and other pertinent information to the traveling public. The local news media will be notified in advance of road closings and other construction-related activities, which could excessively inconvenience the community so that motorists, residents, and business persons can make other accommodations. A sign providing the name, address, and telephone of a Department contact person will be displayed on-site to assist the public in obtaining immediate answers to questions and logging complaints about project activity. All provisions of the FDOT's *Standard Specifications for Road and Bridge Construction* will be followed.

Maintenance of Access

Access to all businesses and residences will be maintained to the extent practical through controlled construction scheduling. In the CR 386 area from US 98 to Overstreet, along SR 22, and at the intersections of the Gulf Coast Parkway with US 98 in Gulf County, with US 98 (Tyndall Parkway), and with US 231, the present traffic congestion may become worse during stages of construction where narrow lanes may be necessary. Traffic delays will be controlled to the extent possible where many construction operations are in progress at the same time. The contractor will be required to maintain two lanes of traffic in each direction along CR 386 and SR 22 and at the project's intersection with US 98 in Gulf County, with US 98 (Tyndall Parkway), and with US 231 at all times and to comply with the BMP of FDOT.

Construction Staging

In addition to the construction of the road and bridges associated with the project, there will be the need to have construction staging areas in the vicinity of each project phase as it goes to construction. Construction staging areas are used for the delivery and storage of construction materials and equipment, contractor offices, and employee parking. These areas vary in size, depending on the size of the construction operation, and may require grading or excavation to level the site, install drainage improvements, and connect utilities. In addition, temporary driveways would be established from access roads to the staging area. Temporary erosion and sediment control measures would be used to prevent runoff of untreated stormwater and sediment from entering nearby wetlands or water bodies, or adjacent properties. After construction has been completed, staging areas would be stabilized, landscaped, or restored and utilities disconnected in accordance with FDOT's *Standard Specifications for Road and Bridge Construction*.

Disposal of Unsuitable Materials

Construction of the roadway and bridges requires excavation of unsuitable material (muck), placement of embankments, and use of materials, such as limerock, asphaltic concrete, and portland cement concrete. Demucking is anticipated at most of the wetland sites and will be controlled by Section 120 of the FDOT's *Standard Specifications for Road and Bridge Construction*. Disposal will be on-site in detention areas or off-site. The removal of structures and debris will be in accordance with local and state regulation agencies permitting this operation. The contractor is responsible for his methods of controlling pollution on haul roads, in borrow pits and other materials pits, and in areas used for disposal of waste materials from the project. Temporary erosion control features, as specified in the FDOT's *Standard Specifications for Road and Bridge Construction*, Section 104, will consist of temporary grassing, sodding, mulching, sandbagging, slope drains, sediment basins, sediment checks, artificial coverings, and berms.

4.4 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Implementation of any transportation system results in irreversible and irretrievable commitments of resources. The commitments are offset by the long-term benefits of increased mobility and access that would result from a transportation improvement project. The following commitments will not occur until after a preferred alternative has been selected and the Final EIS and Record of Decision have been signed.

Resources that would be irreversibly and irretrievably committed to the construction of the proposed project include funds, land, construction materials, fossil fuels, and labor. Although these materials are generally considered irretrievable, they are not considered to be in limited supply. Therefore, their use would not have an adverse impact on their continued availability for other projects both now and in the future.

The construction of the proposed project would generate construction and construction-related jobs over the construction period. The use of labor for the construction of the proposed project would be a temporary benefit and is consistent with the need for any employment opportunities in Gulf County.

4.4.1 Irreversible and Irretrievable Commitment of Resources of the No Build Alternative

The No Build Alternative would result in an irreversible and irretrievable commitment of resources associated with the maintenance and rehabilitation activities to address safety and LOS deficiencies that would be required for the roads in the study area. These maintenance and rehabilitation activities would require commitments of construction materials, fossil fuels, labor, funds and land.

Over the short-term, the commitment of resources would be less under the No Build Alternative than those under the Build Alternatives. However, over the long-term, energy use under the No Build Alternative would increase due to continued increases in congestion.

Also, over the long-term, the No Build Alternative may require more maintenance to compensate for the increased use of existing roadways without the project than would occur with the proposed project. However, there is no reasonable method to determine the future maintenance costs of the No Build Alternative.

4.4.2 Irreversible and Irretrievable Commitment of Resources of the Build Alternatives

The following summarizes the commitment of funds, land, energy and materials, and labor of the Build Alternatives.

4.4.2.1 Commitment of Funds

The current total commitment of funds for the proposed project is estimated to be 25 million dollars. This includes right-of-way costs, design, and construction for the segment of the project from CR 2315 (Star Avenue) to US 98 (Tyndall Parkway. Right-of-way acquisition for this segment has not occurred. The right-of-way, design, and construction and maintenance of other project phases will require the commitment and expenditure of funds which will not be available for other projects and activities.

The commitment of financial resources will produce a one-time benefit to the local and regional economy through labor and capital expenditures for construction and, secondarily, through the flow of the monies within the local economy. These benefits will take the form of a temporary increase in the demand for goods and services provided locally, earnings of local employees and jobs.

The construction of the proposed project requires the acquisition of property which would result in the displacement of residences and businesses. Owners and tenants of the purchased property would be afforded opportunities to relocate, but their existing properties would be converted to highway use and will remove that land from the county tax base. However, it is anticipated that the construction of the proposed project would enhance economic development opportunities in Gulf County by providing a high-speed, through route to tourist areas in southeast Bay and south Gulf counties. It would also encourage economic development by improving access between the enterprise zones on US 98 and CR 386 in Gulf County and I-10, the Intermodal Center on US 231, and the new Northwest Florida Beaches Airport in Bay County. Improvement in the local economy is expected to provide increase tax revenues that would offset those lost in the conversion of taxable land to non-taxable purposes.

4.4.2.2 Commitments of Land

Depending on the preferred alternative, a total of approximately 646.9 acres of acquired land would be committed for the construction and operation of the proposed project. Property acquisition represents an irreversible commitment of real property. However, should a greater need arise for the use of the land, or should the proposed project no longer be needed, the land can be converted and committed to another use.

4.4.2.3 Commitments of Energy and Materials

The proposed project would also require the use of various types of fossil fuels, electrical energy, and other resources during the construction and operation. At this time, these resources are not in short supply and are considered to be readily available for the proposed project. As a result, the use of these resources is not expected to result in an adverse effect upon the continued availability of these resources.

Various types of construction materials, including cement, aggregate, steel and asphalt (bituminous materials), electrical supplies, piping and other raw materials such as metal, stone, sand, and fill material will be committed to the proposed project. The commitment of these resources is irretrievable, but these materials are not considered in short supply; therefore, their use will not result in any adverse effect upon their continued availability.

The project construction will require a temporary increase in energy and fuel consumption. The operation of the proposed project can be expected to result in a decrease in energy consumption, through increased travel efficiency, along both the new and adjacent roads that experience a decrease in congestion due to re-routing of through traffic onto the new facility.

4.4.2.4 Commitments of Labor

The proposed project would require the commitment of labor during the construction period. Although the individuals working on the road construction would not be available for other projects during the construction period, and thus are considered a commitment of irretrievable resources, the employment environment, particularly in Gulf County is such, that there is an adequate supply of labor resources for this and other projects.

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SECTION 5 COMMENTS AND COORDINATION

5.1 PUBLIC INVOLVEMENT PROGRAM

A Public Involvement Program has been developed and is being carried out as an integral part of the Gulf Coast Parkway project. The purpose of this program is to establish and maintain communication with the public at large and the individuals and agencies concerned with the project and its potential impacts. The program was expanded in the Project Development & Environment (PD&E) phase of the project. To ensure early, open communication and agency and public input, an Advance Notification (AN) was provided to state and federal agencies and other interested parties defining the project and, in cursory terms, describing anticipated issues and impacts. In addition, in order to expedite the project development process, eliminate unnecessary work, and provide a substantial issue identification/problem solving effort, an early scoping process was carried out in accordance with the Council on Environmental Quality (CEQ) Guidelines. Finally, in an effort to resolve all issues identified, the Department has conducted an extensive interagency coordination and consultation effort, and public participation process. These efforts began during project planning through the Efficient Transportation Decision Making (ETDM) process.

This section summarizes the effort to fully identify, address, and resolve project-related issues identified through the Public Involvement Program. A chronology of activities has been provided first, including an overview of work performed prior to the PD&E study and prior to the project's inclusion in ETDM. This chronology is presented as an overview of the project to assist in fitting all of the coordination activities into the frame of the project's development. Opinions, comments, responses, and results of the coordination activities is presented in the subsequent sections on agency coordination and public coordination. Due to their voluminous nature of the materials associated with public participation (i.e. newsletters, mailing list database, Public Meeting and Hearing notifications, handouts, etc.), copies of this information are referenced in this document, but located in the appendices of the *Public Involvement Program Summary Report* prepared for this project.

5.2 CHRONOLOGY OF PROJECT COORDINATION ACTIVITIES

The Public Involvement Program for this project began with initiation of the corridor feasibility study in 2001. The following is a chronological history of the coordination activities that have occurred since the project's initiation with a brief description. The discussion is divided into three project phases: Corridor Feasibility Study and Project Concept Report, State Environmental Impact Report (SEIR), and Environmental Impact Statement (EIS). Additional information on these activities is provided in subsequent sections of this chapter and detailed information is provided in the *Public Involvement Program Summary Report*.

5.2.1 Corridor Feasibility Study and Project Concept Report

In 2001, Opportunity Florida obtained Transportation Regional Incentive Program (TRIP) Funds from the Florida Legislature for two transportation improvement projects. Opportunity Florida, a non-profit organization that, among other purposes, assists in stimulating economic growth in those areas of Northwest Florida designated a Rural Area of Critical Economic Concern. One of the projects for which funding was obtained was the Gulf Coast Parkway. A corridor feasibility study was initiated to determine the feasibility of the proposed project and, if feasible, identify a viable corridor for future project development phases. This study and report are discussed in greater detail in **Section 2.1.1**.

Corridor Feasibility Study Advance Notification

The AN for the Corridor Feasibility Study was issued on May 14, 2002. The following agencies responded.

- United States Department of the Air Force: The Air Force commented "Since the events of 11 September, we have been constantly reminded of the vulnerability that results from a highway through the middle of a military installation. The potential of another roadway that could provide a suitable alternative for the public that currently transits the Tyndall reservation would provide a beneficial security option by allowing the base to close off the existing portion of US 98 that runs through Tyndall when necessary. Residential or business development immediately along a bypass on the north side of East Bay would not be in conflict with current Tyndall operations."
- Federal Aviation Administration (FAA), Orlando Airports District Office. The FAA stated that they would be primarily concerned with interchange elevations and associated high-mast lighting in the vicinity of an airport.
- Department of Health and Human Services. Department of Health and Human Services had no specific comments but provided a listing of areas of potential health concerns to be considered where warranted.
- West Florida Regional Planning Council (WFRPC). The WFRPC found the project generally consistent with the *WFRPC Strategic Regional Policy Plan* (adopted July 15, 1996).
- United States Fish and Wildlife Service (USFWS). In addition to providing a listing of threatened, endangered, and other special status species and their habitats, the USFWS recommended the avoidance and minimization of wetland impacts and the consideration of indirect and cumulative effects (ICE).
- US Department of Commerce, National Marine Fisheries Service (NMFS). The NMFS advised that estuarine areas within the study corridor are identified as Essential Fish Habitat (EFH) and requested that EFH be addressed in the Wetland Evaluation Report (WER).
- Bay County Audubon Society. The Bay County Audubon Society expressed concerns about the environmental and ecological consequences of the project due to the presence of habitat for bald eagles, black bears, red-cockaded woodpeckers, and the Panama City crayfish (PCC). They suggested that any plan for the parkway include wide, extensive buffers of native vegetation that are forever preserved, wildlife crossings, avoidance of imperiled habitats, and preservation set-aside of mitigation lands.
- Callaway City Commission. The City Commission stated that there are numerous benefits in routing the proposed parkway as close as possible to the City of Callaway. The City suggested that the route be directed along State Road (SR) 22 to just east of the Callaway Recreation Complex, then north and west to Star Avenue in the vicinity of Tram Road as possibly eliminating the necessity for most land purchases or condemnation of property near the SR 22 and Star Avenue intersection or require the relocation of businesses or residences. The City Commission also suggested that this route would be conducive to connecting Bay, Gulf and Jackson Counties to future transportation development. And that the re-routing of traffic away from Tyndall Air Force Base (AFB) would benefit both Tyndall and the region.
- Bay County Economic Development Alliance. The Alliance stated that they fully supported the City of Callaway in their efforts to have the Gulf Coast Parkway come as close to their city as possible.
- Florida Department of Community Affairs (DCA). The DCA stated that the proposed project was not consistent with the comprehensive plans of Gulf, Calhoun, or Bay Counties in that the project is not contemplated on the Traffic Circulation Map, or any other map of future conditions. They also requested that the study consider secondary and cumulative effects. They also

recommended that the studies of the Gulf Coast Parkway and the Gulf to Bay Highway projects be combined.

- Florida Fish and Wildlife Conservation Commission (FFWCC). The FFWCC also recommended that the Gulf Coast Parkway Corridor Study be combined with the Gulf to Bay Highway PD&E Study into one EIS and consideration of secondary and cumulative effects.
- Northwest Florida Water Management District (NWFWMD). The NWFWMD also recommended consideration of secondary and cumulative effects.
- Florida Department of Environmental Protection (FDEP), Office of Intergovernmental Programs . The Office of Intergovernmental Programs noted that the project is located in the St. Andrews Bay Watershed and that St. Andrews Bay is A Florida Surface Water Improvement and Management (SWIM) priority waterbody, is designated Class II water by Rule 62-302.400 (12)(b)3, F.A.C. They also noted that the northern portion of the study area contains Bear Creek, its tributaries and its floodplain. Bear Creek is a tributary to Deer Point Lake reservoir, a Class I waterbody that is the primary drinking water source for cities within Bay County. They expressed concern for the project effects on water quality. FDEP also requested that secondary and cumulative effects be evaluated and that the Gulf Coast Parkway study be combined with the Gulf to Bay Highway study.

Subsequent correspondence was received from the USFWS and the Bay County Audubon Society.

- USFWS recommended the preparation of EIS to demonstrate adherence to Federal Highway Administration (FHWA)-FAPG 23 Code of Federal Regulations (CFR) 771.105(b) regulations, requiring that "alternative courses of action be evaluated and decisions be made in the best overall public interest based upon a balanced consideration of the need for safe and efficient transportation; of social, economic, and environmental impacts of the proposed transportation improvement; and of national, state, and local environmental protection goals.
- Bay County Audubon Society recommended that the reasons for the project be provided to the public immediately. If the need for the project is adequately justified, then they recommended the corridors be selected only after a thorough review of existing data. The corridors chosen should be subjected to intensive ecological surveys and primary and secondary impacts should be assessed. Further, they recommended upgrading existing highways as an alternative to a new corridor. They also expressed concerns that the same mitigation requirements applicable to Florida Department of Transportation (FDOT) would not be required for the project.

Corridor Feasibility Study Local Government Kick-off Meetings

Kick-off meetings were held with the following local government entities.

- Panama City-Bay County Metropolitan Planning Organization (MPO) (now Bay County Transportation Planning Organization (TPO)
- Bay County Commission
- Gulf County Commission
- Calhoun County Commission
- Callaway City Council
- Parker City Council

Corridor Feasibility Study Newsletters

A total of three newsletters were distributed during the Gulf Coast Parkway Corridor Feasibility Study.

- First newsletter was published in November 2002
- Second newsletter was published in February 2003
- Third newsletter was published in at the conclusion of the study in October 2003

Corridor Feasibility Study Public Workshop

Three meetings were conducted during March 2003. A total of 2,700 individuals received notification of the meetings.

- Bay County meeting was held on March 17, 2003 at the Merritt Brown Middle School. Twenty-nine people attended. Two verbal comments were provided to the court reporter. One objected to Corridor A on environmental grounds because it provided a new crossing of East Bay and the second comment favored improving existing roads over construction of the Gulf Coast Parkway. One formal comment was received regarding how the economic benefits for the project had been determined.
- Gulf County meeting was held on March 18, 2003 at the Centennial Building in Port St. Joe. Fifty-five people attended. Two persons made comments during the comment period of the presentation. One person urged the study team to take a regional approach to the study. The second commenter asked how much of the land along the corridors was owned by the St. Joe Company. The response to that comment was that the amount of land owned by the St. Joe Company was unknown and was not a factor in the location of corridors.
- Calhoun County meeting was held on March 20, 2003 at the Neil Civic Center. Eighteen people attended this meeting. Twelve written comments were received. Two comments objects to the project, one comment supported a tri-county planning process instead of a new road, one comment expressed support for widening SR 71 instead of the Gulf Coast Parkway, one comment suggested the inclusion of a multi-use trail in the typical section, one comment objected specifically to Corridor E, and eight comments were in favor of the project. Of the eight supportive comments, one was unqualified support, one requested that the road be elevated over environmentally sensitive areas, four comments preferred Corridor D as the most beneficial to Gulf County, and two comments supported the project based on the positive impacts to the economy of Gulf County.

5.2.2 State Environmental Impact Report

The PD&E phase of the project was initiated by Opportunity Florida in 2005. Projects without federal funds have the PD&E study documented in a SEIR. Therefore, the PD&E phase began as a SEIR. The explanation of the change of the PD&E study from a SEIR to an EIS is provided in the next section.

State Environmental Impact Report Advance Notification

The AN by Opportunity Florida of the beginning of a PD&E study for the Gulf Coast Parkway was issued on August 24, 2005.

5.2.3 Environmental Impact Statement

On August 10, 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was enacted by Congress. Federal funds were included for the design phase of the

Gulf Coast Parkway project. The designation of federal funds for future project phases resulted in the transfer of project sponsor responsibilities from Opportunity Florida to the FDOT. The documentation of the PD&E study also changed from a SEIR to an EIS. The change in sponsorship did not affect any commitments that had been previously made by Opportunity Florida as FDOT will make the same commitments.

In addition to the change in project sponsorship, the implementation of the requirements of the SAFETEA-LU necessitated that the project be entered into the FDOT's ETDM process. The ETDM process normally includes submittal of the AN but because the ETDM process was just being launched by FDOT, it was not fully operational. Therefore, a revised AN was submitted separately from the ETDM process.

Environmental Impact Statement Advance Notification

A revised AN was issued on September 2, 2005, nine days after the August 25, 2005 (SEIR) AN. The issuance of a revised AN was necessary to indicate the changes in the project since the allocation of federal funds for design. Agencies and other interested parties receiving copies of the AN are provided in **Table 5-1**. **Table 5-2** summarizes the agency comments received and FDOT's responses. A copy of the AN package and agency response letters responses are contained in **Public Involvement Summary Report**.

Table 5-1 Agencies Receiving Advance Notification

Federal Agencies	State Agencies
Federal Highway Administration – Director	Florida Department of Environmental Protection – District Director *
Federal Emergency Management Agency – Region IV, Director	Florida Fish and Wildlife Conservation Commission – Executive Director *
Federal Aviation Administration – Airports District Office	Florida Division of Forestry – Chipola River District, Manager
Federal Railroad Administration – Office of Economic Analysis, Director	Florida Department of Community Affairs *
United States Department of the Interior – Bureau of Land Management, Eastern States Office	Florida Department of State – Division of Historical Resources*
United States Environmental Protection Agency – Region IV, Regional Administrator*	
United States Department of the Interior – Fish and Wildlife Service, Southeast Regional Office, Director	**Regional and Local Agencies**
United States Department of the Interior – U.S. Geological Survey Chief	West Florida Regional Planning Council *
United States Army Corps of Engineers – Regulatory Branch, District Engineer*	Apalachee Regional Planning Council
United States Coast Guard – Commander (obr), Eight District	Northwest Florida Water Management District *
United States Department of Commerce – National Marine Fisheries Service, Habitat Conservation Division*	Gulf County Board of Commissioners
United States. Department of Commerce – National Oceanic and Atmospheric Administration	Bay County Board of Commissioners
United States Department of Agriculture – Southeast Region, Regional Director	City of Port St. Joe
United States Department of Agriculture – Natural Resources Conservation Service – Florida State Office, State Soil Scientist	City of Mexico Beach
United States Department of Health and Human Services – Center for Environmental Health and Injury Control	City of Callaway
United States Department of Housing and Urban Development – Regional Environmental Officer	City of Lynn Haven
United States Department of the Interior – National Park Service, Southeast Regional Office	City of Springfield
United States. Department of Interior – Bureau of Indian Affairs, Office of Trust Responsibilities	City of Parker
	City of Panama City
Tribes	Tyndall AFB
Muscogee Nation of Oklahoma	
Miccosukee Tribe of Indians of Florida	
Poarch Band of Creek Indians of Alabama	
Seminole Tribe of Florida	
Seminole Nation of Oklahoma	

*Agencies responding to the AN

Table 5-2 Agency Comments on the AN and FDOT Responses

Agency	Comment	Response	Updated Response
United States. Department of Commerce – National Marine Fisheries Service	Stated certain marine and estuarine habitats within the project area are designated as EFH as identified in the 1998 generic amendment of the Fishery Management Plans for the Gulf of Mexico. Due to the fact the roadway would cross a number of creeks and bayous which empty into estuarine habitats in East Bay, concerns were expressed regarding maintenance of the area's natural hydrology and freshwater inflow to the estuarine environment. NMFS requested EFH consultation, including a comprehensive EFH assessment, to be initiated as soon as specific project design and construction impact information becomes available. Upon review of the EFH assessment, NMFS will determine if conservation recommendations are necessary. Consultation with the NMFS Protected Resources Division may also be necessary due to the fact the project area could potentially be inhabited by several sea turtle species and a portion of Gulf sturgeon Critical Habitat Unit 11 occurs along the Gulf shoreline of Mexico Beach, near the southern terminus of the project.	*A site visit and coordination will be conducted with the NMFS. Once specific alignments within the corridors chosen for further analysis are determined, a more realistic proposal of impacts to EFH will be available and analyzed. Should it be deemed necessary, an EFH assessment will be prepared and consultation will be conducted with the NMFS. Opportunity Florida will strive to work with all commenting agencies to continue to address concerns in reference to this project throughout the study.*	*The EFH assessment is located in Section 5.2.5 of the Wetlands Evaluation Report.*
United States. Environmental Protection Agency(USEPA)	It was noted that due to the level of this project, an EIS would be required. USEPA requested more data be produced in reference to US 98 road closures due to Tyndall AFB security along with traffic data from all existing roads within the area. Encouraged the utilization of existing roadways in the alternatives analysis and preferred this utilization to extend to the final project. In addition, the agency requested consideration of access control in the form of limited access for the roadway to steer development away from high value wildlife habitat, to minimize road intersection congestion, and to maintain the level of service and safety. The project area has numerous high value natural habitats, including migratory birds, which should be analyzed. Due to the potential of residential and commercial development in the area, the EIS should define the indirect-cumulative impacts. Requested land cover (vegetation) and other characteristics need documentation, including the avoidance of all Federal Emergency Management Agency (FEMA) flood prone zones through the X-500 flood zone.	*A significant level of preliminary analysis utilizing aerial photography and environmental information data layers has been given to all corridors. Further analysis will be conducted to determine how to best minimize impacts along the alternative alignment. Further detailed analysis will be conducted in an effort to provide an alternative alignment which best minimizes impacts to wetlands and waters of the State. Avoidance and minimization to wetland impacts per alignment will be documented and described as part of the EIS which will be developed for this proposed project. The EIS process will include a detailed alternatives analysis. Opportunity Florida will strive to work with all commenting agencies to continue to address concerns in reference to this project throughout the study.*	*All of this information is located in the EIS. Land cover documentation is located in the EIS and the WER. Migratory bird potential impacts are located in the Endangered Species Biological Assessment Report (ESBAR). The potential indirect and cumulative impacts are addressed in Section 4 of the EIS. Land cover is located in the WER and EIS. FDOT has coordinated closely with commenting agencies during the PD&E and this can be seen in further detail in the Public Involvement Program Summary Report and the EIS.*
United States. Army Corps of Engineers	Requested measures be taken to avoid and minimize impacts to wetlands and waters. In order to accomplish this, the Corps advocated use of elevated, piling-supported structures. Structures in or over navigable waters should not impede navigation. Mitigation on some level would be required for this project, depending on the level of impact. The Corps recommended areas with significant environmental lands and features not to be impacted. The agency also requested coordination with federal and state wildlife agencies in order to protect regional flora and fauna. Concerns were expressed that this project will have long-term adverse cumulative effects on the aquatic environment. Due to the possibility of residential development in the project area coupled with the propensity of this area to tropical storms, the Corps expressed concerns for future residents of the area. Since this project lies within the Northwest Florida Greenway Corridor project limits, a request was made for coordination with the agencies responsible for managing the Greenway Corridor.	*A significant level of preliminary analysis utilizing aerial photography and environmental information data layers has been given to all corridors. Further analysis will be conducted to determine how to best minimize impacts along the alternative alignment. Further detailed analysis will be conducted in an effort to provide an alternative alignment which best minimizes impacts to wetlands and waters of the State. Avoidance and minimization to wetland impacts per alignment will be documented and described as part of the EIS which will be developed for this proposed project. The EIS process will include a detailed alternatives analysis. Opportunity Florida will strive to work with all commenting agencies to continue to address concerns in reference to this project throughout the study. This project is not within the Northwest Florida Greenway Corridor.*	*Please refer to the EIS Section 4.3.4 and the WER for wetland and water impacts. Navigation is covered in Section 2.3.4 and Section 4.3.18 of the EIS also.* *Avoidance and minimization efforts were conducted throughout the project to protect significant environmental lands and is discussed in Section 2. Coordination with federal and state environmental agencies was conducted throughout the PD&E Study and is included in this section as well as in the WER, ESBAR.*
United States Department of Interior – Fish and Wildlife Service	USFWS expressed concerns of potential impacts to protected species within the project area. The agency requested that red-cockaded woodpecker surveys be conducted within the area to determine if suitable nesting and foraging habitat may be affected. Depending on the survey findings, a foraging habitat analysis should be conducted. Protection of the habitat corridor between the Wetappo and Lathrop woodpecker populations was requested. Due to the presence of the state-protected PCC along the west side of Star Avenue and the fact Star Avenue is being presented as a possible tie in of the Parkway with US 231, other alternative alignments should be considered. FDOT and Opportunity Florida were encouraged to participate in the ongoing candidate conservation agreement with assurances to address the species conservation needs. USFWS recommended using a habitat evaluation model to identify and evaluate suitable habitat for the flatwoods salamander. Recommendations for bald eagle surveys within the project area were made. To determine effects on listed and rare plants, a comprehensive floral survey was requested within proposed alignments. Avoidance, minimization, and mitigation efforts were requested in reference to impacts on aquatic resources. Participation was requested from FDOT and Opportunity Florida in the regional ecosystem planning effort already initiated by the St. Joe Company. USFWS raised concerns over the new roadway fragmenting the regional landscape and could potentially affect both migrating and wide-ranging species. Wildlife crossings were suggested as a way to help maintain habitat and reduce the risk of loss. Concerns over migratory bird habitat and the possibility of bird take during construction were raised. USFWS requested participation in conservation planning efforts and examining other potential corridor alternatives to result in a less environmentally damaging roadway. There was an acknowledgement that an EIS will be prepared for this project.	*Specific comments from the USFWS are appreciated to identify existing resources. This information will be utilized to ensure adequate analysis and protection is planned for any proposed alignments in proximity to resources of protection areas. It is anticipated that red-cockaded woodpecker surveys will be conducted in relation to any accepted proposed corridors for this roadway project as will habitat evaluation modeling for the flatwoods salamander, and nest surveys for bald eagles in the area. Acceptable surveying procedures will be conducted to ensure accuracy and qualitative use of data collected. Specific fieldwork to identify and calculate potential impacts to the listed and rare plant species has not been conducted due to the numerous potential corridors and alignments. Seasonal vegetative surveys are proposed to be initiated in spring 2007. The preliminary nature of the alternative corridors serves as initial areas of investigation for potential alignments within the corridors. Once specific alignments within the corridors chosen for further analysis are determined, a more realistic proposal of impacts to wetlands and waters of the State will be available and analyzed. Specific fieldwork to identify and calculate actual potential impacts to species within the study area has not been conducted due to the numerous potential corridors and alignments. Narrowing down the potential corridors will make groundtruthing more feasible. Furthermore, potential direct, indirect, and cumulative effects of this project will be documented in the EIS which is scheduled to be completed at the end of the PD&E Study. Opportunity Florida is committed to working with stakeholders in regards to identifying the potential affect of the proposed project to wildlife resources.*	*Please refer to the EIS and ESBAR for potential impacts to protected species.*

Agency	Comment	Response	Updated Response
Florida Fish and Wildlife Conservation Commission	FFWCC commented on the number of rare and imperiled plant and animal species which may occur within the project corridors. Concerns were expressed about the fragmentation and loss of habitat for the PCC with both North options. In addition, concerns over the loss of Florida black bear through road kill and the fragmentation of its habitat were mentioned. It was recommended that surveys be performed in reference to the bear populations in the study area as well as the use of wildlife underpasses and other conservation measures to be implemented in design of the new roadway. Fear of habitat fragmentation was also a fear in reference to the flatwoods salamander in addition to species mortality. FFWCC also recommended a flatwoods salamander survey be conducted in the Wetappo Creek basin for impact avoidance, minimization, and mitigation. FFWCC stated their fear that a new roadway in the vicinity of Lathrop Bayou and the Wetappo Creek areas would have a detrimental effect on the red-cockaded woodpecker colonies in the area due to fragmentation of habitat and the uncontrolled growth of groundcover. Another species of particular concern was the bald eagle. Recommendations were stated in reference to following the USFWS habitat management guidelines along with coordination with USFWS and FFWCC. Overall recommendations included the reevaluation of other possible corridors, the use of approved surveys for all listed species, steps to avoid or minimize impacts to important habitat and fish and wildlife resources in the study area, in addition to the composition of an Environmental Technical Advisory Team (ETAT). Secondary impacts from potential residential and commercial development were also mentioned resulting in the loss of habitat and further development in an environmentally sensitive area. FFWCC stated that mitigation efforts would need to be addressed in the EIS and encouraged future coordination.	*Specific comments from the FFWCC are appreciated to identify existing resources. This information will be utilized to ensure adequate analysis and protection is planned for any proposed alignments in proximity to resources of protection areas. It is anticipated that red-cockaded woodpecker surveys will be conducted in relation to any accepted proposed corridors for this roadway project as will habitat evaluation modeling for the flatwoods salamander, and nest surveys for bald eagles in the area. Acceptable surveying procedures will be conducted to ensure accuracy and qualitative use of data collected. The preliminary nature of the alternative corridors serves as initial areas of investigation for potential alignments within the corridors. Once specific alignments within the corridors chosen for further analysis are determined, a more realistic proposal of impacts to wetlands and waters of the State will be available and analyzed. Specific fieldwork to identify and calculate actual potential impacts to species within the study area has not been conducted due to the numerous potential corridors and alignments. Narrowing down the potential corridors will make groundtruthing more feasible. Furthermore, potential direct, indirect, and cumulative effects of this project will be documented in the EIS which is scheduled to be completed at the end of the PD&E Study. Opportunity Florida is committed to working with stakeholders in regards to identifying the potential affect of the proposed project to wildlife resources.*	*Please refer to the EIS (Section 4.3.14), ESBAR, WER, and ICE Report. An ETAT was formed and coordinated with throughout the PD&E Study.*
Florida Department of Environmental Protection	FDEP expressed concern over the project's potential effect on water quality in the St. Andrews Bay watershed, particularly non-point source storm water runoff. Requests were made for the draft environmental document to include the following: identification of significant natural resources (particularly wetland and water resources); identification of how each alternative will avoid and minimize natural resource impacts, maintenance of watershed functions and protect water quality; evaluation of direct, secondary, and cumulative impacts to identified natural resources; description of any mitigation concepts to offset unavoidable impacts to wetlands, water quality or other natural resources; and evaluation of a "No-Build" alternative. FDEP requested immediate and continued coordination with state resource agencies as the project moves forward.	*The preliminary nature of the alternative corridors serves as initial areas of investigation for potential alignments within the corridors. Once specific alignments within the corridors chosen for further analysis are determined, a more realistic proposal of impacts to wildlife, wetlands, and waters of the US will be available and analyzed. Specific fieldwork to identify and calculate actual potential impacts to these natural resources has not been conducted due to the numerous potential corridors and alignments. Narrowing down the potential corridors will make groundtruthing more feasible. Furthermore, potential direct, indirect, and cumulative effects of this project will be documented in the EIS which is scheduled to be completed at the end of the PD&E Study. Opportunity Florida will commit to avoiding, minimizing, and mitigating impacts to water resources for the Gulf Coast Parkway. Further, Opportunity Florida will strive to work with all commenting agencies to continue to address concerns in reference to this project throughout the study.*	*Please refer to Section 4.3.20 of the EIS and the ICE Report.*
Florida Department of Community Affairs	DCA determined the project is not inconsistent with Florida Statutes or the goals, objectives and policies of the plan. However, they acknowledge this project is not currently addressed in the local government's comprehensive plans. The roadway would improve access to state roads in the region, additionally would serve as an additional hurricane evacuation route. However, the portion of the project beginning in Gulf County lies within the Coastal High Hazard Area and Gulf County's Comprehensive Plan does not justify a need for increased density and intensity within the Coastal High Hazard Area. In addition, the portion of this roadway project which exists outside of the urban service boundaries of both counties should not be considered as an impetus to encourage future development in the rural area. A recommendation was made that the project not be advanced into the Five Year Work Program until both County comprehensive plans are amended to reflect the proposed roadway modification.	*No response required.*	*No response required.*
Florida Department of State – Division of Historical Resources	Replied but provided no comment.	*No response required.*	*No response required.*
Northwest Florida Water Management District	Due to the fact the study area has extensive wetland, stream, and estuarine resources, development of a new major roadway would have considerable potential for impacts on water and related resources. Therefore, NWFWMD recommended analysis should identify and describe potential direct, secondary, and cumulative impacts to wetlands and other sensitive habitats, as well as potential offsite impacts from non-point source pollution and hydrologic change. In addition, NWFWMD recommended alternative actions to avoid or minimize impacts be considered and evaluated. Mitigation was mentioned as means to offset wetland impacts caused by the new roadway.	*The preliminary nature of the corridors submitted for analysis serves as initial areas of investigation for potential alignments within the corridors and requires further scrutiny to determine appropriate alignments within the proposed corridors. Further analysis, particularly instituted through the EIS process will narrow down specific corridors, alignments and potential impacts. Once a specific alignment has been chosen for detailed analysis, potential mitigation measures will be coordinated with the regulatory agencies, as required. At this phase in the proposed project's analysis, mitigation option development would be premature. Opportunity Florida will strive to work with all commenting agencies to continue to address concerns in reference to this project throughout the study.*	*These wetland and natural resource concerns are addressed in the EIS (Section 4.3.4), WER, and ICE Report.* *Avoidance and minimization efforts were conducted throughout the project to protect significant environmental lands and are also discussed in Sections 2.3 and 2.5 of the EIS.*
West Florida Regional Planning Council	The comment received from WFRPC was actually a forwarded comment from the Planning and Zoning Division of Bay County. Concerns were expressed over the potential impacts to the Florida Black Bear and the red-cockaded woodpecker. Secondary impacts and traffic noise were also mentioned as unavoidable consequences of the new roadway. Efforts to minimize vehicle-caused deaths of the black bear and the gopher tortoise were also requested. It was requested that the long-term impacts of the project on the sensitive ecosystems and rare organisms be given special attention in the planning phase of the project.	*It is anticipated that red-cockaded woodpecker surveys will be conducted in relation to any accepted proposed corridors for this roadway project as will habitat evaluation modeling for the flatwoods salamander, and nest surveys for bald eagles in the area. Acceptable surveying procedures will be conducted to ensure accuracy and qualitative use of data collected. Specific fieldwork to identify and calculate potential impacts to the listed and rare plant species has not been conducted due to the numerous potential corridors and alignments. Seasonal vegetative surveys are proposed to be initiated in spring 2007. The preliminary nature of the alternative corridors serves as initial areas of investigation for potential alignments within the corridors. Once specific alignments within the corridors chosen for further analysis are determined, a more realistic proposal of impacts to wetlands and waters of the State will be available and analyzed. Specific fieldwork to identify and calculate actual potential impacts to species within the study area has not been conducted due to the numerous potential corridors and alignments. Narrowing down the potential corridors will make groundtruthing more feasible. Furthermore, potential direct, indirect, and cumulative effects of this project will be documented in the EIS which is scheduled to be completed at the end of the PD&E Study. Opportunity Florida is committed to working with stakeholders in regards to identifying the potential affect of the proposed project to wildlife resources.*	*These concerns are addressed in the EIS (Section 4.3.14), ESBAR, and ICE Report. Please refer to these documents.*

Environmental Impact Statement Local Government, Public and Agency Kick-off Meetings

Kick-off meetings for the PD&E study were conducted for local government agencies, the public, and the resource agencies. The details of these meetings are provided in the Public Involvement Program Summary Report. The dates of the meetings are listed below along with issues raised at the meetings.

- Local Government Agency Kick-off Meetings

Bay County TPO Citizens Advisory Committee	8/24/05
Bay County TPO Board	8/24/05
Bay County TPO Technical Coordinating Committee	8/24/05
Bay County Commission	9/06/05
Gulf County Commission	9/13/05
Parker City Council	9/21/05
Callaway City Council	9/27/05
Springfield City Council	10/03/05
Mexico Beach City Council	10/11/05
Cedar Grove City Council	10/25/05

- Public Kick-off Meetings

Gulf County	11/28/05
Bay County	11/29/05

- Resource Agency Kick-off Meetings

First Resource Agency Kick-Off Meeting	11/29/05
Second Resource Agency Kick-off Meeting	3/08/06
Environmental Technical Advisory Team (ETAT) Field Review	4/05/06 through 4/06/06

No comments were made at the local government agency kick-off meetings but during the PD&E Study some of the local governments provided resolution letters or letters of support for the project, or particular alternatives which are provided in the *Public Involvement Program Summary Report*. **Table 5-3** summarizes the comments and FDOT responses from the public kick-off meetings.

Table 5-3 Comments and FDOT Responses from the Public Kick-off Meetings

Comment	Response
Do not consider the middle pathway that goes right over the Wetappo. The creek is pristine and needs to be preserved. The cheapest involves not having to building the bridge over the intercoastal regardless there are many property owners on the Wetappo, south of Pleasant Rest Cemetery Road who have sailboats.	This alternative corridor was eliminated and is not being considered at this point in the PD&E study.
We live on Wetappo Creek. We look forward to a shorter route to Panama City. Our concerns are (1) the noise level of traffic since we can see the power lines from our front porch. (2) The clearance of the bridge height since so many of us have boats that require 50' clearance. During Hurricanes charter boats and shrimp boats take refuge on the creek. (3) The wildlife which is too numerous to mention. We are not against progress we just want it to be carefully thought out first. I favor the western corridor.	(1) Those alternatives that crossed Wetappo at that location have been eliminated. (2) A high-level bridge crossing will be designed over Wetappo Creek and it will allow 50' of clearance. (3) Minimization and avoidance measures were employed on wildlife impacts during the PD&E Study. Please refer to the ESBAR and the EIS for further information on these measures and results.
What will be the tie-in at old 98? (2) What will be the tie in at new 98?	The tie-in to 98 will be at County Road (CR) 386/US 98 in Gulf County and in close proximity to the Tram Road/US 98 Intersection in Bay County.
Why is the road not going up Jarrott Dannels which is already a cut out road? There are very few residences as opposed to Pleasant Rest Rd. and surrounding which has close to 20 residences. I am concerned about the effects on the wetlands in that area. I prefer corridor A or C from the feasibility study.	The Jarrott Daniels Road was considered at one time but the environmental impacts were too high compared to the other alternatives. Minimization and avoidance measures were employed on wetland impacts during the PD&E Study. Please refer to the EIS or the WER for further information on these measures and results.
The westerly route over the canal is the most desirable.	No comment needed.

Efficient Transportation Decision Making

The Gulf Coast Parkway Project was entered into the ETDM Programming Screen in April 2006. The alternatives presented were alignment options of Corridor B, the recommended corridor from the Corridor Feasibility Study. The initial review process by the ETAT was completed on April 30, 2006. At this time, several agencies in the ETAT identified a degree of effect of Dispute Resolution for coastal and marine, ICE, wetlands, and wildlife and habitat.

A meeting to discuss the Dispute Resolution findings was conducted on October 17, 2006. Representatives of the ETAT, including FHWA, FDOT Central Environmental Management Office (CEMO), and FDOT - District Three attended. Members of the ETAT in attendance included USFWS, United States Army Corps of Engineers (USACE), USEPA, FDEP, FFWCC, NWFWMD, and the DCA. During this meeting, the FHWA made the decision to "re-start" the ETDM Programming Screen, which meant that the first Programming Screen review was not published. The "re-start" would include:

- The six options of Corridor B from the Corridor Feasibility Study originally entered into ETDM.
- The other four corridors from the original Corridor Feasibility Study.
- Any additional corridors the ETAT members wished to submit for consideration.

Eight additional alternative corridors were submitted by the ETAT members. Therefore, an analysis of eighteen Alternative Corridors was conducted utilizing the ETDM Programming Screen data to identify which of the corridors were most reasonable to carry forward for more detailed study.

On January 25, 2007 FHWA approved the Purpose and Need Statement for the project and, utilizing the project's purpose and need criteria, determined that twelve of the possible eighteen corridors acceptably met the project's purpose and need.

The twelve Alternative Corridors were presented in a second Environmental Screening Tool (EST) Programming Screen review on February 13, 2007. At the conclusion of the second Programming Screen review period, the FDOT prepared and entered summary degrees of effects for each environmental category into EST, which summarize for the ETAT representatives and the affected community the level of anticipated involvement in each category and how FDOT will address their comments and concerns. **Appendix I** is a table summarizing the ETAT comments and FDOT responses.

After the ETAT review of the project in the EST there were four issues identified as Dispute Resolution in the Degree of Effect. These are summarized in **Table 5-4**.

Table 5-4: Summary of Dispute Resolution Issues and Resource Agency Concerns

Dispute Resolution Issue	Resource Agencies Claiming Dispute Resolution	Agency Concerns & Recommendations	Status
Coastal and Marine	NMFS	Federal agencies which permit, fund, or undertake activities which may impact EFH must consult with NMFS and prepare an EFH assessment.	Consultation is on-going with NMFS
		In addition to direct impacts, concerned about the maintenance of natural hydrologic patterns and freshwater inflow to estuarine waters; and pollutants in stormwater runoff from road surface.	Project effects on EFH Resources are discussed in Section 4.3.5
Indirect and Cumulative Effect (ICE)	USEPA	Water quality and aquatic habitat protection should be priority considerations. Access control and future land use must be defined. Stormwater management must be evaluated. Additionally, the spread of invasive species as a result of rapid development is a concern.	Access control will be consistent with FDOT standards for a future SIS facility. Future land use has been addressed in Section 4.1.3 and Section 4.3.20. Stormwater management is summarized in Section 4.3.7 and discussed in detail in the PER. Invasive species will be treated in accordance with FDOT Standard Specifications for Road and Bridge Construction.
	FDEP	Stormwater runoff as a result of potential rural development and its effects of waterbodies are of particular concern.	Stomwater runoff will be treated to state standards for the receiving the water body.
	NMFS	Stormwater runoff as a result of increased residential and commercial development must be addressed. Limited access may help control sprawl.	Stormwater runoff as a result of induced growth is addressed in Section 4.3.20
	USFWS	Secondary and cumulative effects must be evaluated. Secondary and cumulative impacts to wildlife and habitat should be minimized through limited corridor access, proven roadway design, mitigation areas, wildlife crossings, environmentally-sensitive bridge crossings, non-native species control, protected and rare plant protection, water quality protection and	Indirect (secondary) and cumulative effects on wildlife and habitat have been addressed in Section 4.3.20.

Dispute Resolution Issue	Resource Agencies Claiming Dispute Resolution	Agency Concerns & Recommendations	Status
		hydrologic connection maintenance	
	NWFWMD	ICE must be analyzed. Dedicated water resource protection should be implemented, including stormwater management, waterfront buffer zones, wetland protection, wetland mitigation, construction and design best management practices (BMP), and limited access. Potential wetland mitigation plans should be considered, including early interagency planning in accordance with Florida statutes.	Indirect and cumulative effects have been analyzed. The discipline report presenting the analysis has been reviewed by the agencies and is summarized in Section 4.3.20.
Wetlands	FDEP	Wetland resource / stormwater permit applicant is required to eliminate or reduce impacts through avoidance, fill reductions, typical section, compensatory treatment, and mitigation. Cumulative Effects must be addressed. High-level bridging should be utilized for Intracoastal Waterway (ICWW)/Wetappo Creek. crossing. PCC habitat is a concern.	Wetland mitigation will mitigated as discussed in Section 4.3.4. Cumulative effects have been addressed in Section 4.3.20. High level bridging has been proposed for alternatives utilizing the ICWW/Wetappo Creek alignment. Impacts to PCC habitat have evaluated and discussed in Sections 4.3.14 and 4.3.20.
	NMFS	Natural hydrology, freshwater inflow, and stormwater runoff are concerns. Impacts to EFH must be addressed	Section 4.3.5 presents the evaluation of impacts to EFH.
	NWFWMD	Direct and cumulative impacts should be minimized.	Minimization of direct impacts has been presented throughout Section 2 in the description of the development of alternatives and is summarized in Section 2.4.5.
	USACE	Due to the overall acreage of wetland impacts an EIS should be prepared. Jurisdictional determination, functional analysis, pond siting analysis, wetland avoidance / minimization, a mitigation plan, limited / restricted access, wetland crossing design, and Quality Enhancement Strategies are all recommended.	An EIS is being prepared.
Wildlife and Habitat	FFWCC	An EIS is recommended to address issues of adverse effects to natural resources, the public interest, controversial aspects requiring high agency interaction, and potential for irreversible impacts to the environment including ICE. An interagency Environmental Advisory team is also recommended, as well as participation in the Scoping Process, to address riparian system protection, need for wildlife underpass structures, runoff, population and movement surveys, and PCC mitigation.	An EIS is being prepared and includes the indirect and a cumulative effects analysis (Section 4.3.20). An interagency advisory team was utilized early in the project development process for scoping, developing issue action plans, and especially to develop the indirect and cumulative effects analysis methodology. This group has had continued involvement in the project with the review of draft documents summarizing the effects analysis on sensitive resources.

Dispute Resolution Issue	Resource Agencies Claiming Dispute Resolution	Agency Concerns & Recommendations	Status
	USFWS	Impacts to protected species must be minimized or avoided, potentially through bridging, habitat acquisition / restoration, developmental balance, limited access, and growth management. In accordance with the Endangered Species Act, direct, indirect, and cumulative effects to species and habitat must be determined; this includes the red-cockaded woodpecker, flatwoods salamander, bald eagle, PCC, and protected and rare plants. Habitat fragmentation, habitat corridors, and wildlife crossings are also issues of concern, as are potential effects to migratory birds. Finally, lighting in coastal environments must be compliant with sea turtle protection.	Impacts to protected species have been minimized as much as feasible for the level of project development. As the project proceeds into the Final EIS phase, additional efforts will be made to further minimize involvement with protected species. An indirect and cumulative effects analysis has been conducted and is presented in Section 4.3.20. This analysis addressed the species identified by the USFWS during the advisory group's participation in developing the ICE analysis methodology. The proposed project would not provide lighting in coastal environments.

The Dispute Resolution process in ETDM was intended as a method of resolving conflicts at the agency ETAT level in order to expedite the project in later phases of project development. There is a list of "triggers" for initiating dispute resolution.

- Project is contrary to the goals and policies of the State of Florida
- Project is non-permittable
- Project is contrary to a state or federal resource agency's program, plan or initiative
- Project has significant environmental cost
- Project purpose and need is disputable

Initial resolution of disputes is an informal process. If the resolution is reached any agreements, understandings and/or recommendations resulting from the informal process are incorporated in the environmental documentation. If the conflict remains unresolved, it will then enter the more formal ETDM Dispute Resolution Process.

The informal process involves the development of an "Issue Paper/Position Paper" to be reviewed by the ETAT member agency heads and the FDOT District Secretary. If dispute cannot be resolved by the local agency heads, then the dispute moves to the statewide or regional agency heads who will review all relevant project information. The agency heads will make the final decision in consultation with the Governor.

At the ETDM programming stage, too much was unknown about the effects of the proposed Gulf Coast Parkway alternatives to reach resolution with the resource agencies. Therefore, Issue Action Plans for each of the four issues identified for dispute resolution (coastal and marine, wetlands, wildlife and habitat, and ICE) were developed in coordination with the agencies that identified the Dispute Resolution issues (**Table 5-5**). These plans (**Appendix L**) were created to establish the conditions for achieving resolution on those controversial issues.

Table 5-5 Issue Action Plans

Issue Action Plans	Content	Status
Coastal and Marine	Outlines procedures to provide detailed information on project effects; identifies concerns to be addressed potential impact on natural hydrology and freshwater inflow to estuarine environment, effects of increased traffic and associated pollutants in stormwater, and effect of induced development; and identifies the resource agencies (NMFS and FFWCC) with which scoping and coordination will occur.	On-going
Indirect and Cumulative Effects	Outlines procedures to provide detailed information on ICE; provides for agency coordination during scoping and throughout study and opportunity to review documents.	On-going
Wetlands	Outlines procedures to provide detailed information on project effects; provides for agency coordination during scoping and throughout study and opportunity to review documents.	On-going
Wildlife and Habitat	Outlines procedures to provide detailed information on project effects; provides for agency coordination during scoping and throughout study and opportunity to review documents.	On-going

Studies have been conducted in accordance with the procedures identified in the Issue Action Plans and draft reports have been reviewed and commented upon by the resource agencies. The comments have been addressed and responded to and the reports have been modified, as appropriate, and resubmitted with response letters (all agency review comments, FDOT response letters, and agency replies can be found in **Appendix J**). **Table 5-6** summarizes the status of each discipline report.

Table 5-6: Status of Discipline Reports

Dispute Resolution Issue	Issue Discipline Report	Report Submitted	Agency Comments (Dated)	Comments Addressed, Report Revised, & Resubmitted	Concurrence Status
Coastal and Marine	Essential Fish Habitat Report (attached as appendix to Wetland Evaluation Report)	Yes	NMFS (6/21/11)	Yes	On-going
Indirect and Cumulative Effects	Indirect and Cumulative Effects Report	Yes	USFWS (6/1/11) NWFWMD (6/3/11) FFWCC (6/13/11) NMFS (6/21/11) USACE (7/15/11) USACE (7/16/11)	Yes	Ongoing
Wetlands	Wetlands Evaluation Report	Yes	USFWS (6/1/11) USACE (7/16/11)	Yes	Ongoing
Wildlife and Habitat	Endangered Species Biological Assessment Report	Yes	USFWS (5/18/11)	Yes	Ongoing

Although resolution of all agency concerns will not be achieved with the completion of the Draft EIS, FDOT will utilize the Reasonable Assurance Process discussed in **Sections 4.3.5 and 4.3.14** to provide assurance that agency concerns will be addressed in the remaining project phases. Because resolution of agency concerns cannot be fully addressed until a preferred alternative is identified, the impacts are refined, and the details of mitigation measures finalized, the Dispute Resolution process will not be completed until the conclusion of the PD&E study.

Environmental Impact Statement Notice of Intent

The Notice of Intent to conduct an EIS was issued on November 1, 2007 (see **Appendix G)**.

Environmental Impact Statement Agency Scoping Meeting

The scoping meeting for the project was held at the Springfield Community Center on November 14, 2007. Forty-six residents and business owners along with forty-two agencies, public officials, and interested non-governmental groups, including representatives from FHWA, FDOT, USFWS, NMFS, NWFWMD, FDEP, WFRPC, Florida Department of Agriculture and Consumer Services – Division of Forestry, Northwest Florida Transportation Corridor Authority (NWFTCA), Bay County, Gulf County Board of County Commission, City of Callaway, City of Parker, City of Panama City, City of Mexico Beach, Friends of Wetappo Creek, and Gulf county Transportation Committee, and Bay County Audubon Society, attended the meeting. This is further discussed in Section 5.3.

Environmental Impact Statement Request for Cooperating Agencies

On December 4, 2007, the FHWA and FDOT invited six agencies to be Cooperating Agencies as part of the ETDM process for the Gulf Coast Parkway project. No official request or letter was submitted by FHWA for this request as it was done through coordination during the ETDM process. The USACE, USEPA, USFWS, NMFS, FDEP, and NWFWMD agreed to be Cooperating Agencies. All other ETAT agencies are considered to be Participating Agencies.

Environmental Impact Statement Initial Corridor Evaluation

Upon completion of the second Programming Screen review, the Corridor Alternatives Evaluation Summary Report (CAESR) completed in consultation with the FDOT, the FHWA, and the ETAT. The corridors were evaluated based on their Purpose and Need, social and natural environmental impacts, and total costs to determine which corridors would be identified for further evaluation in the PD&E study. This analysis is discussed in Section 2.2 of this EIS and can also be found in the *Gulf Coast Parkway Corridor Alternatives Evaluation Summary Report.*

A draft version of the CAESR was approved by the FHWA on March 19, 2009 for ETAT review. The ETAT completed their review on April 29 and the report was revised to include an appendix that summarized the ETAT comments and responses to those comments. After the revisions to the CAESR were made and the findings of the report updated, the Final CAESR and its recommendations for corridors to be carried forward for further analysis was approved by FHWA on June 15, 2009.

Environmental Impact Statement Corridor Public Workshop

Two corridor public workshops, one in Bay County and one in Gulf County, were conducted for the Gulf Coast Parkway Project. In addition, prior to the workshops, presentations were made to the local government agencies. The following is a list of meetings associated with the Corridor Public Workshops that occurred.

- Local Government Agency Presentations (July 2008 - August 2008)

  Bay County TPO Citizens Advisory Committee
  Bay County TPO Board
  Bay County TPO Technical Coordinating Committee
  Bay County Commission

Gulf County Commission
Parker City Council
Callaway City Council
Springfield City Council
Mexico Beach City Council
Cedar Grove City Council

- Corridor Public Workshops

  Gulf County - Approximately 109 people attended the workshop held on 8/12/08 at the Centennial Building (2201 Centennial Drive) in the City of Port St. Joe.

  Bay County - Approximately 124 people attended the workshop held on 8/21/08 at the Springfield Community Center (3728 E. 3rd Street) in City of Springfield.

Completion of the Environmental Impact Statement Corridor Evaluation

The *Final Draft Corridor Alternatives Evaluation Summary Report* was submitted to the ETAT on March 31, 2009 for review. A review period was provided, from April 1 to April 29, 2009, and on April 15, 2009 a meeting/teleconference was held for the ETAT members to ask questions and/or discuss the report.

On June 15, 2009, the FHWA issued their final approval of the *CAESR*, which includes a summary of the comments received from the ETAT along with responses to those comments in its appendix. Based on the ETAT feedback, two additional alternatives were included for further analysis. Therefore, a total of five Alternative Corridors were selected for the development of alignments during the PD&E Study.

The main issue to come out of this corridor evaluation was that the alternatives may involve historic and archeological sites and these sites might be subject to section 4(f).

Environmental Impact Statement Alternatives Public Workshop

Two alternative public workshops, one in Bay County and one in Gulf County, were conducted for the Gulf Coast Parkway Project. In addition, prior to the workshops, presentations were made to the local government agencies. The following is a list of meetings associated with the Alternatives Public Workshops that occurred.

- Local Government Agency Presentations (September 2009 - October 2009)

  Bay County TPO Citizens Advisory Committee
  Bay County TPO Board
  Bay County TPO Technical Coordinating Committee
  Bay County Commission
  Gulf County Commission
  Parker City Council
  Callaway City Council
  Springfield City Council
  Mexico Beach City Council
  Cedar Grove City Council

- Alternative Public Workshops

  Gulf County - the workshop was held on 10/15/09 at the Centennial Building (2201 Centennial Drive) in the City of Port St. Joe.

  Bay County - the workshop was held on 10/20/09 at the Springfield Community Center (3728 E. 3rd Street) in City of Springfield.

Main issues at these meetings were nature environmental impacts, economic gain from the project, potential relocations of landowners, federal monies involved / construction costs, access management to existing residents, congestion impacts to existing US 98, and possible realignments from public input.

Environmental Impact Statement Stakeholders Public Workshop

A Stakeholders Public Workshop was held on November 3, 2009, from 1:30 to 3:30 p.m. at the Woodlawn United Methodist Church (219 North Alf Coleman Road) in Panama City Beach, Florida.

No comment forms were submitted at this meeting. However the Port Panama City Port Authority (Port Authority) did object to Alternative 14 traveling through their planned Bay County Distribution Center. Further meetings and coordination were held with the Port Authority and it was agreed that if Alignment 14 was ultimately selected as the preferred route further coordination would occur to make sure that the best solution for designing the alignment through their property would be considered.

5.3 COORDINATION WITH AGENCIES

Agency coordination for the EIS began with the publication of the project in the FDOT ETDM Programming Screen and issuance of AN. As noted above under Environmental Transportation Decision Making, the project was republished in the programming screen with additional corridors developed by members of the EST. Since several members of the ETAT claimed Dispute Resolution regarding some area resources, these ETAT members were invited to participate in an advisory group for the project. It is this group that participated in the development of Issue Action Plans to help resolve the Dispute Resolution concerns. This group has continued to contribute to the project at various milestones in the project's development, including: the corridor evaluation phase leading to the selection of the viable corridors, guidance and participation in development of the methodology for the ICE analysis, and reviews of draft discipline reports for those issues of concern and the Draft EIS. Other agency coordination activities not specifically related to the agency advisory group are summarized below.

5.3.1 Scoping Meeting

A formal Scoping Meeting was held with agencies on November 14, 2007. The purpose of the scoping meeting was to:

1. Determine the scope and the significance of issues and the degree of analysis required in the EIS. This included identifying the range of alternatives and impacts to be evaluated.

2. Identify and eliminate from detailed study those issues which are not significant or which have been covered by prior environmental studies, thereby narrowing the discussion of those issues with effects on the human environment in the EIS by providing a reference to their coverage elsewhere (i.e., other sections of the EIS, technical reports).

3. Allocate assignments for preparation of EIS among lead and cooperating agencies with the lead agency (FHWA/FDOT) retaining responsibility for the EIS.

4. Identify any other environmental documents which are being prepared and are related to, but are not part of, the scope of the Draft EIS under consideration.

5. Identify other environmental review and consultation requirements so that the lead and cooperating agencies may prepare other required analysis and studies concurrently with the EIS. Examples of additional requirements include surveys and studies required by the Fish and Wildlife Coordination Act, the National Historic Preservation Act of 1966, the Endangered Species Act of 1973, and other environmental laws and executive orders.

6. Identify if any permits, licenses, or entitlements are necessary.

7. Discuss the relationship between the timing of the preparation of environmental analyses and the agency's tentative planning and decision-making schedule.

No agencies responded to the Scoping Meeting Notice. The Scoping Meeting Notice is located in the appendices of the *Public Involvement Program Summary Report*.

The Scoping Meeting was held at the Springfield Community Center. Forty-six residents and business owners along with 42 agency, public officials, and interested non-governmental groups attended, including representatives from FHWA, FDOT, USFWS, NMFS, NWFWMD, FDEP, WFRPC, Florida Department of Agriculture and Consumer Services - Division of Forestry, Northwest Corridor Transportation Authority (NWFTCA), Bay County, Gulf County Commission, City of Callaway, City of Parker, City of Panama City, City of Mexico Beach, Friends of Wetappo Creek, Gulf County Transportation Committee, and the Bay County Audubon Society. Topics discussed at the meeting included:

- Introduction to project background, project need, ETDM process, and ETAT review and comment.

- Schedule and process of the corridor evaluation study, EIS, funding, and public and agency involvement.

- Preliminary corridors submitted and commented on by the ETAT in the ETDM Programming Screen review and corresponding environment and socioeconomic impacts, engineering alternatives, traffic service factors, costs, and evaluation matrix.

One comment was presented at the Scoping Meeting:

Comment: The Sandy Creek area is known to be an area of intense high density of threatened and endangered species in the study published by the Nature Conservancy in 1996. There is concern with the road causing increased development and with the road potentially bisecting important habitats.

Response: *The study team is aware of the sensitivity of the Sandy Creek area and is developing alternatives that avoid or minimize involvement with the listed species and their habitat in this area.*

No questions from the general public were received.

Five comments were received after the Scoping Meeting:

Comment: Suggested the construction of "comfort stations" along the roadway.

Response: *No response required.*

Comment: Expressed concern about the project dumping more traffic on already stressed roadways (US 231 and I-10) during hurricane evacuations. Expressed concern about the impact of development on the wildlife and habitat in this region.

Response: *The same amount of traffic would be on US 231 and I-10 with or without the project. The proposed roadway, by providing an alternate route, would divert some of that traffic further to the north on US 231 than they would utilize access under the No Build scenario thereby relieving congestion in the Panama City area and along key roadways such as US 98. Relieving congestion on the roadways reduces evacuation times, especially from those areas nearest the coast.*

The direct, indirect, and cumulative effects of the proposed alternatives, including the No Build, on the wildlife and habitat within the region will be evaluated as part of the environmental impact study being performed for this project.

Comment: Risk of environmental harm that could result from this project extends far beyond the footprint of the alternative ultimately selected and the integrity of the EIS depends on a full analysis of the road itself and effects of the readily foreseeable growth it will facilitate.

Response: *An analysis of the ICE of the proposed alternatives will be conducted during the environmental impact study.*

Comment: Made suggestions for adaptations of Alternatives 7 and 16 to benefit more residents and travelers.

Response: *No response required.*

Comment: Opposed the project due to its potential impact on the environment. Expressed concern over the "special interests" that would be the only beneficiaries of a constructed parkway.

Response: *The project's purpose and need have been established as: 1) enhance economic development in Gulf County through provision of direct access to major transportation facilities (regional freight transportation routes and intermodal facilities); improved mobility; and direct access to tourist destinations in south Gulf County; 2) improve mobility within the regional transportation network by providing a new connection to existing and future transportation routes consistent with the Bay County Long Range Transportation Plan (LRTP); 3) improve security of the Tyndall AFB by providing a shorter detour route, and 4) improve hurricane evacuation for residents of coastal Gulf County by providing an additional evacuation route. The beneficiaries of this project are the residents of Gulf and Bay counties and travelers of the transportation network of which this project will become a part.*

While the proposed improvements have been developed to meet the requirements established by the project's purpose and need, they have been and are continuing to be

done so while considering the potential environmental impacts they may incur. It is the intent of the PD&E process to ultimately identify an alternative that meets the project's purpose and need while minimizing adverse effects on the socioeconomic, natural, and physical environment of the study area.

The EIS being prepared for this project, with agency coordination and public involvement, will document that process. It is the intent of the PD&E stage of project development to develop alternatives that meet the project's purpose and need, compare their impacts, and identify avoidance and mitigation measures that will offset the adverse effects.

The Scoping Meeting transcript and sign-in sheets are located in the appendices of the *Public Involvement Program Summary Report* prepared for this project.

5.3.2 Environmental Agency Meetings

In addition, numerous field and office meetings, email correspondences, and phone conversations with regards to natural resource assessments and analysis techniques have occurred since this project was initiated in 2006. Discussion of dispute resolution issues identified through review of the project in the EST resulted in the drafting and subsequent approval of the following Issue Action Plans (**Appendix L**): Coastal and Marine Action Plan, ICE Action Plan, Wetlands Action Plan, and Wildlife and Habitat Action Plan. Elements of each plan were incorporated into supporting resource assessments that culminated in various technical documents, e.g., ESBAR , WER, in support of the PD&E and National Environmental Policy Act (NEPA) processes.

As the project has progressed, studies have been conducted in accordance with the procedures identified in the Issue Action Plans and draft reports have been prepared and subsequently reviewed and commented upon by the resource agencies. The comments have been addressed and the reports have been modified, as appropriate, and resubmitted with response letters (**Appendix J**). **Table 5-5**, above, summarizes the status of issues addressed in the Issue Action Plans. **Table 5-6,** above, summarizes the status of each discipline report.

Because resolution of agency concerns cannot be fully addressed until a preferred alternative is identified, the impacts of that alternative are refined, and the details of mitigation measures worked out, the Dispute Resolution process will not be completed until the conclusion of the PD&E study. Although resolution of all agency concerns will not be achieved with the completion of this Draft EIS, FDOT will utilize the Reasonable Assurance Process discussed in **Sections 4.3.5 and 4.3.14** to provide assurance that agency concerns will be addressed in the remaining project phases.

A summary of other agency coordination activities is provided in **Table 5-7**, below.

Table 5-7: Summary of Gulf Coast Parkway Agency Correspondence

Date	Agency	Type of Correspondence	Representative
2/2/2007	USFWS	Email correspondence concerning Guidelines for Conducting and Reporting the results of Botanical Surveys.	Mary Mittiga, USFWS
4/23/2007	USFWS	Email correspondence to set up field review meeting.	Mary Mittiga, USFWS
5/1/2007	USFWS	Field meeting to review proposed Gulf Coast Parkway corridors.	Patty Kelly, Mary Mittiga, Vivian Negron-Ortiz, USFWS
5/2007	Multiple Agencies	Wetlands Field Evaluation Methodology Consultation. Email correspondence was sent between the above agencies and FDOT to discuss the proposed wetland evaluation methods for the PD&E study. Revisions and suggestions were shared by the agencies and a methodology was determined.	Mary Mittiga, USFWS; Ted Hoehn, FFWCC; Andy Phillips, USACE
5/14/2007	USFWS	Email correspondence regarding listed plant species information.	Patty Kelly & Mary Mittiga, USFWS
7/24/2007	FFWCC	Meeting to discuss State species concerns.	Scott Sanders, Ted Hoehn, Terry Gilbert, Ernest Ladkani, Greg Vaughn, Eric Schneider
8/28/2007	Multiple Agencies	Meeting to discuss Draft Issue Agreement Plan.	ETAT
8/29/2007	FFWCC	Email correspondence concerning location data for PCC.	John Hines, FFWCC
8/2007 and 9/20/2007	NMFS and FFWCC	Multiple email messages regarding EFH survey methods, modifications to survey methods due to field conditions, and final approval of survey methods.	David Rydene, NMFS; Lisa Gregg, FFWCC; Ted Hoehn, FFWCC
9/20/2007	FFWCC	Email request for black bear data in Bay and Gulf Counties and/or Northwest Florida in general (Bear Roadkill, Bear Telemetry, Nuisance Bear and Bear Range). Also requested two reports: Closing the Gaps (latest edition), Integrated Habitat Ranking System.	FFWCC
10/9/2007	USFWS	Email correspondence about flatwoods salamander assessment methods and comments on assessment method approach.	Hildreth Cooper, USFWS
11/7/2007	Multiple Agencies	Email correspondence concerning PCC field meeting focused on species identification and draft mitigation options.	David Cook, FFWCC
11/29/2007	USACE	Follow-up to USACE inquiring about coordination with the NMFS on EFH.	Andy Phillips, USACE
7/8/2009	Multiple Agencies	Meeting with ETAT to discuss project status, finalization of CAESR, and to develop Cumulative Effects (CE) Advisory Group and agree on Cumulative Effects Methodology for project.	ETAT
8/11/2009	Multiple Agencies	Meeting with CE Advisory Group to finalize methodology, discuss the group guidelines, and to begin steps 1 through 3 of the Cumulative Effects Evaluation.	Agency Advisory Group
9/11/2009	Multiple Agencies	Meeting with CE Advisory Group to develop boundaries for resources to be evaluated in the CE and to develop the time and geographic scope of the study.	Agency Advisory Group
10/21/2009	Multiple Agencies	Meeting with CE Advisory Group to discuss characterizations of existing environment, impact thresholds for resources, and past, present, and future actions affecting each resource	Agency Advisory Group
12/8/2009	FFWCC	Email correspondence listing wildlife species of potential concern, potential indirect impacts, and generalized mitigation objectives and goals.	Terry Gilbert, FFWCC
12/8/2009	NMFS	Email correspondence concerning EFH indirect impact analysis related to alignment buffers.	David Rydene, NMFS

12/9/2009	Multiple Agencies	Email and phone correspondence about buffer widths associated with indirect impact assessments concerning threatened and endangered species and EFH.	Ted Hoehn, FFWCC, David Rydene, NMFS; Mary Mittiga, USFWS, Terry Gilbert, FFWCC
12/18/2009	FFWCC	PCC data/assessment methods	John Himes, FFWCC
4/20/2011	FDEP NMFS NWFWMD USACE United States Coast Guard (USCG) USEPA USFWS	Submittal of Pre-Draft EIS and draft technical reports were submitted to cooperating agencies as required by NEPA and in compliance with 23 CFR Part 771	David Rydene, NMFS Ron Bartel, NWFWMD Irene Sadowski and Randy Turner, USACE Commander, 8th District, USCG Madolyn Dominy, USEPA Donald Imm and Mary Mittiga, USFWS
4/20/2011	USFWS	Submitted copy of ESBAR and WER for concurrence of affect findings.	Mary Mittiga, USFWS
3/4/2013	USFWS NMFS NWFWMD USCG	Response letters sent for comments received from these agencies on the pre-draft EIS and Draft Cumulative Effects report	Mary Mittiga, USFWS David Rydene, NMFS Duncan Cairns, NWFWMD David Frank, USCG
8/1/2013	USCG	Response to reply from USCG on letter sent regarding the revisions to the pre-draft EIS on March 4, 2013	David Frank, USCG

5.4 PUBLIC COORDINATION

The public involvement for the Gulf Coast Parkway to date has occurred in two stages: (1) during the Corridor Feasibility Study and Project Concept Report, and (2) since the initiation of the SEIR and EIS. To date there have been no requests for Limited English Proficiency (LEP) language services; however, should the need arise, LEP services are available. The following provides further detail of the public efforts previously mentioned for these two phases.

5.4.1 Corridor Feasibility Study Public Involvement

An AN was distributed on May 14, 2002, upon initiation of the Gulf Coast Parkway Corridor Feasibility Study in accordance with the requirements of Part 1, Chapter 2 (now Chapter 8, of the FDOT *Project Development and Environment Manual{PD&E})*. This was followed by local government kick-off meetings for the Panama City – Bay County MPO [now TPO]), the Bay County Commission, the Gulf County Commission, the Calhoun County Commission, and the city councils for Callaway, Parker, and Mexico Beach.

Three newsletters were distributed during the study to approximately 3,000 people in Gulf and Bay counties and the communities of Springfield, Mexico Beach, and Callaway. The first, published in November 2002, described the study area, the corridor feasibility study process, and provided names with contact information. The second newsletter, distributed in February 2003, summarized the progress on the study and provided information about the forthcoming corridor workshops. The final newsletter was submitted at the conclusion of the corridor feasibility study to inform the public of the study findings and the next steps in the project development process.

Three corridor workshops, held during March 2003, were conducted in accordance with the requirements in the FDOT *PD&E Manual*. A total of 102 people attended the three workshops. Six formal comments were made during the meetings.

1. One asked how the economic benefits had been determined.

   Response: *Mr. Semoon Chang determined these benefits using an economic model that essentially factors in savings in transportation costs over existing conditions. The new roadway is looked upon as a tool by the model.*

2. One objected to Alternative Corridor 7 (at the time known as Corridor A in the Corridor Feasibility Study) on environmental grounds.

   Response: *Corridor 7 is not under consideration anymore. It was eliminated from the analysis in the corridor phase of the PD&E Study.*

3. Two favored improving existing roads.

   Response: *Improving existing roads was considered in the corridor phase of the PD&E Study. It was later eliminated as it did not meet purpose and need of the project.*

4. One urged a regional approach to the planning study.

   Response: *The regional planning approach was taken into account and used in the ICE Study for the project.*

5. One asked for clarification on whether the proposed project was to be a four-lane facility.

   Response: *The ultimate typical section is a 4-lane facility.*

6. One asked how much of the property along the right-of-way was owned by the St. Joe Company.

   Response: The amount of land owned by the St. Joe Company was unknown and was not a factor in the location of corridors.

Twelve written comments were received during the comment period.

7. Eight comments were in favor of the project, four specified Alternative Corridor 15 (Corridor D in the Corridor Feasibility Study) as a preferred corridor.

   Response: No response needed.

8. One opposed Corridor E. (no longer under consideration but was east of Alternative 9 and connected to US 231 just south of Youngstown, FL).

   Response: *Corridor E is not under consideration anymore. It was eliminated from the analysis in the corridor phase of the PD&E Study.*

9. One supported the multi-use trail.

   Response: No response needed.

10. One expressed support for widening existing SR 71.

    Response: This was considered in the corridor evaluation phase and eventually eliminated. It did not meet the purpose and need of the project.

11. One supported a tri-county planning process instead of a new road.

    Response: *A new roadway is needed to meet the purpose and need of the project.*

Overall the majority of the feedback from the public was positive for the project. The concerns were more on the need of a new roadway and the approach taken on a PD&E Study.

Numerous oral comments supporting the project were made to FDOT staff during the open-house portion of the workshop.

In addition, resolutions supporting the project were received from the Callaway City Commission (Resolution #03-04, dated February 17, 2003), the City of Panama City (Resolution #022503-1, dated February 25, 2003), the Springfield City Commission (Resolution #03-02, dated February 24, 2003), and the Panama City Urbanized Area MPO (Resolution #03-06, dated April 28, 2003), which recommended Corridors A (Alternative 7) or B (Alternatives 9 or 12).

Tyndall AFB also submitted a letter indicating that the project would benefit security at the base by providing a suitable alternative route for the public. Tyndall AFB indicated this would significantly upgrade its force protection posture and the safety and security of its personnel and resources, as well as enhance its ability to execute its mission in heightened threat conditions.

5.4.2 PD&E Public Involvement

At the initiation of the SEIR study, prior to the appropriation of federal for the project, an AN for the project was distributed to the Florida State Clearinghouse - FDEP/OIP and other interested federal, state, regional, and local agencies on August 24, 2005. Also, a series of kick-off meetings were held with local government officials, the public, and regulatory agencies. A list of the public kick-off meetings and the dates they were conducted are provided in **Table 5-8**.

Table 5-8: Gulf Coast Parkway PD&E Study Public Kick-off Meetings

Group	Date of Meeting
Gulf County Public	11/28/05
Bay County Public	11/29/05

Both public kick-off meetings provided an opportunity for the public to review exhibits, obtain hand-outs, and ask questions before the project presentation. The presentation included a description of the prior studies and the selection of Corridor B from the Corridor Feasibility Study, the development of the six alignment options to be studied, an explanation of the study to be conducted and the schedule for completion, and an explanation on how to obtain additional information. Following the presentation, the project team remained to answer any questions. A lengthy discussion was held with a few members of the public following the presentation providing more detail on the project, the project development process, and the funding situation. Overall, the public was favorable to the project.

A total of five comment sheets were returned during the formal comment period.

- Three comments favored the western route across the ICWW and Wetappo Creek.
- One asked why the alignment was not utilizing Jarrott Daniels Road (an unpaved road) and indicated a preference for any of the corridors from the corridor study except for the one selected.
- One asked how the new road would tie to US 98.

5.4.3 Environmental Impact Statement Public Involvement

Federal funds were appropriated for the project on August 10, 2005, necessitating preparation of an EIS. Public Involvement activities that have been conducted since the change to an EIS are discussed here.

Invitational mailers/letters to each of the scheduled Public Workshops were mailed to federal and state agencies, local officials, and owners of property within 300 feet (ft) of the centerline of the proposed alternatives. This notification process was used for the August 2008 and October 2009 Public Workshops. Additional concerned individuals or groups identified during the study were added to the project mailing list database throughout the course of the study and also received invitations.

To ensure notification to all of the interested public, a newspaper advertisement was placed in *The Port St. Joe Star* and *the Panama City News Herald,* for each Public Workshop. Each advertisement ran approximately one week in advance of its respective workshop, announcing the specific public workshop meeting date, location, and time. Also, press releases were distributed to the print media one week in advance of the workshops.

5.4.3.1 Alternative Corridors Public Workshops

Two Alternative Corridors Public Workshops were held to provide information to the public about the 12 corridors being considered for the Gulf Coast Parkway and to obtain public input regarding the corridors under consideration. Notifications of the workshops were published in *The Port St. Joe Star* on August 7, 2008 and in the *Panama City News Herald* on July 31, August 3, August 4, and August 10, 2008.

The Alternative Corridors Public Workshop in Gulf County was held from 6:00 to 7:30 pm on August 12, 2008 at the Centennial Building (2201 Centennial Drive) in the City of Port St. Joe. Approximately 109 people attended. The workshop was conducted using an "open house" format, allowing the public to view aerial photography, maps, and comparative data of the study area and the proposed corridors. FDOT representatives and the study consultant were also available to answer questions and discuss the project. After the "open house" period, a formal presentation was delivered followed by a question/comment period. During the workshop, a public opinion survey was made available which could be filled out and submitted at the workshop or taken home and submitted by mail at a later date. A public comment sheet was also provided along with a handout to each attendee for them to read over information about the project and leave a written comment. Additionally, a court reporter was available at the workshop for any individuals who wished to leave a public comment in this manner.

Four comments were received at the first Corridor Alternatives Public Workshop. Below are the comments and FDOT's resulting response or action:

Comment: This road is to support future tourism and commerce in Gulf County and Port St. Joe.

Response: *No response needed.*

Comment: What impact will this have on houses along the Parkway, specifically in Overstreet? Will this affect insurance costs to the homes located on the Parkway?

Response: *The proposed project corridors are being developed to minimize residential and business relocations. However, should the selected alternative require the acquisition of property involving a relocation, the FDOT will carry out a right-of-way and relocation program in accordance with Florida Statute 339.09 and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646 as amended by Public Law 100-17).*

The proposed project is not anticipated to adversely affect insurance costs to homes located along the project route. A slight positive effect may occur to a few properties where access and response times are significantly improved by the project, but this would need to be determined by contacting your insurance carrier once the route was constructed.

Comment: Would project effect property rights? The property has been family owned for 20 years.

Response: *The proposed project would not affect property rights, nor would access be denied. Should right-of-way need to be acquired, the FDOT will carry out a right-of-way and relocation program in accordance with Florida Statute 339.09 and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646 as amended by Public Law 100-17).*

Comment: We favor Alternatives 7, 8, 11 and 17. Our favorite is Alternative 17.

Response: *No response needed.*

An Alternative Corridors Public Workshop was also held in Bay County on August 21, 2008 at the Springfield Community Center (3728 E. 3rd Street) in the City of Springfield. Approximately 124 people attended. The purpose and format of the workshop was identical to the workshop held in Gulf County, as was the information presented. Again, a public opinion survey, public comment sheet accompanying a meeting handout, and a court reporter were made available to all attendees.

Seven comments were received at the second Corridor Alternatives Public Workshop. Below are the comments and FDOT's resulting response or action:

Comment: Would like to see Nehi Road to SR 390 option.

Response: *No response needed.*

Comment: I own property along Alternatives 7 and 17 and would like to work with FDOT on road alignment.

Response: *No response needed.*

Comment: Gulf Coast Parkway would provide improved east-west access to region and airport.

Response: *No response needed.*

Comment: Consider putting new road connection through Callaway Heights Area on Highway 22.

Response: *No response needed.*

Comment: Favor Alternatives 7 and 17.

Response: *No response needed.*

Comment: Favor Alternatives 7 and 17. Impressed with Presentation and Accessibility.

Response: *No response needed.*

Comment: Favor Alternative 11, then Alternatives 12 or 13. Ease traffic and accessibility to Panama City.

Response: *No response needed.*

Following the workshops, a public comment period in which the comment forms and public opinion surveys could be returned was held open until August 31, 2008. This feedback was used to assist in determining corridors for further study. A summary of the survey responses is provided in Section 5.4.4.

In addition to the workshops on August 12 and 21, the project website (www.gulfcoastparkway.com) also provided a means for the public to view and/or download all of the material that was presented at the workshops, including the presentation. The public opinion survey and comment forms were also available on the project website where both could be filled out online and submitted or downloaded and returned by mail.

Illustrations of the proposed Alternative Corridors, Roadway Sections, and a copy of the PowerPoint presentation shown at the workshops are located in the appendices of the *Public Involvement Program Summary Report*.

5.4.3.2 Alignment Alternatives Public Meeting

The first Alignment Alternatives Public Meeting was held on October 15, 2009, from 6:00 to 7:30 p.m. in Bay County at the Springfield Community Center in Springfield, Florida. This meeting was attended by representatives from local municipalities and the public. The purpose of the meeting was to present the 5 alternative roadway alignments, the roadway typical sections, and comparative information on each alignment to the public and to receive comments and preferences on the alternative roadway alignments. This feedback was used to assist in determining the publicly preferred alternative for the study.

At the meeting, a presentation was given by Ms. Rosemary Woods from PBS&J which provided a project update and then focused on the five alternative roadway alignments, the roadway typical sections, and the environmental, cultural and social concerns, as well as the estimated costs for these alternatives. A public comment period was held after the presentation. The meeting was concluded in an "open house" format, where those in attendance were invited to view the aerial maps and boards on display and speak with project staff.

The second Alignment Alternatives Public Meeting was held on October 20, 2009, from 6:00 to 7:30 p.m. in Gulf County at the Centennial Building in Port St. Joe, Florida. The same presentation and illustrations from the October 15th meeting were provided.

Following the meetings, a public comment period in which the comment forms and public opinion surveys could be returned was held open until October 30, 2009. A summary of the survey responses is provided in later portions of this section.

Seven comments were received at the Alignment Alternatives Public Meetings. Below are the comments and FDOT's resulting response or action:

Comment: When possible, I would like to have access points on the type of roadway section goes through his property.

Response: *No response needed. This will be provided in the future.*

Comment: I wanted to be included on future comment opportunities.

Response: *His contact information was taken down and added to the interested parties' mailing list.*

Comment: Can the section of Highway 386 using routes 17 and 19 use existing highway before the short section turning left or right? It would save right-of-way acquisition and not relocate people.

Response: *It will use existing highway as much as possible. Every effort will be made to try and avoid relocating people.*

Comment: Am I directly in the path of this project? Is the starting point (CR386 @98) immovable and set in stone? If I am on the border of this project, then I would need to know specifics as to how close this will come to my home?

Response: *No you are not. Yes the southern logical terminus is set in stone at the CR 386/US 98 intersection.*

Comment: Why is Jarrod Daniels Road not being considered? I would like better information and definition of resident impacts through the Wetappo Creek area from Alternatives 8, 14, and 15. How will this reduce my travel time, as all routes are upwards of 30 miles. It only takes me 30 minutes to travel to Callaway how will this reduce my travel time?

Response: *The Jarrott Daniels road was considered in the corridor evaluation phase but the environmental impacts were too high compared to the other corridors therefore it was eliminated. Residential Impacts are covered in detail in the EIS so please refer to it. Depending on where you live, the whole road (total distance) might not be utilized to go from Overstreet to Callaway. The calculated distance for each alternative includes both northern terminuses.*

Comment: How much federal money will be required? Why isn't this project being done by the NW Fl Transportation Corridor Authority? What level population growth for this area is being projected? Is cost the only consideration for a 2-land versus a 4-land project? Is a project goal to induce more development into this area? Will the roadways have unlimited access to properties adjacent to the right-of-way or will access be limited as associated with a parkway design?

Response: *It is not known at this time how much federal money will be required or utilized. This project was taken over as an FDOT job when Opportunity Florida was disbanded, the NW FL Transportation Authority could have taken it over also. There is not a project goal to induce more growth in the area. Please refer to the EIS and ICE report to see the analysis. It is proposed to be a controlled access typical section so it will not be limited.*

Comment: Why can't you use St. Joe Co. wooded land, instead of tearing down 26 to 51 beach homes on Hwy 386? Where is the traffic coming from that warrants a four land highway? What does your traffic count on CR 386 show?

Response: *Because FHWA requires we use what is called logical termini. The future traffic is coming back and forth from Mexico Beach, Port St Joe and going north to US 98 Tyndall Parkway, US 231, etc. Please refer to the Gulf Coast Parkway Traffic Report.*

Illustrations of the proposed Alternative Roadway Alignments, Roadway Sections, and a copy of the PowerPoint presentation shown at the meeting are located in the appendices of the *Public Involvement Program Summary Report* prepared for this project.

5.4.3.3 Stakeholders Public Workshop

A Stakeholders Public Workshop was held on November 3, 2009, from 1:30 to 3:30 p.m. at the Woodlawn United Methodist Church (219 North Alf Coleman Road) in Panama City Beach, Florida. The workshop began with a brief presentation, followed by a discussion period to answer questions and to obtain feedback about the project and the specific alternative alignments presented.

At the workshop attendees were given the opportunity to provide comments and feedback. No comment forms were submitted. However the Bay County Port Authority did object to Alternative Alignment 14 traveling through their planned Bay County Distribution Center. A letter from the Authority was submitted to FDOT and is included in the appendices of the *Public Involvement Program Summary Report*. Further meetings and coordination were held with the Port Authority and it was agreed that if Alignment 14 was ultimately selected as the preferred route further coordination would occur to make sure that the best solution for designing the alignment through their property would be considered.

5.4.4 Public Opinion Surveys

Public Opinion Surveys were distributed at the Corridor Assessment Workshops and the Alignment Alternatives Public Meetings to collect public opinion and preferences. The information from the public opinion surveys are utilized as part of the criteria for identifying the publicly preferred alternative. Copies of the surveys are included as **Appendix K**. The analysis of the survey results is summarized in the Public Involvement Summary Report.

5.4.4.1 First Public Opinion Survey

This first public opinion survey was distributed at the Alternative Corridors Public Workshop. The questions in the survey, therefore, were pertinent to the corridors under consideration. The questions were designed to obtain the public's preferences for a corridor and to identify the issues of greatest importance. The issues provided include: economic development, project cost, environmental impacts, use of existing roads and bridges, congestion relief or avoidance, hurricane or emergency evacuation, access to the north, access to and between places, versatility, most direct route, property impacts and relocations, personal reasons, bypass of Tyndall AFB, and roadway safety.

The following list presents those issue categories selected most often or second-most often for each corridor.

Corridor 7 was selected most often for cost, access to and/or between places, most direct route, Tyndall Bypass, and personal reasons. When similar corridors were combined, the combined Corridor 7/17 remained the most preferred route for the aforementioned issue

categories, but also became the preferred route in the economic and environmental categories.

Corridor 8 was selected most often for versatility. It was second most often selected for the Tyndall Bypass. When combined with Corridor 11, it was second most selected for the additional categories of: use of existing bridges/roadways, access to and/or between places, most direct route, and personal reasons.

Corridor 9 was second most often selected versatility and Tyndall Bypass. Combined with Corridor 12, it was most often selected for use of existing bridges and roadways.

Corridor 10 Corridor 10 in combination with Corridor 13 was second most often selected in the environment category.

Corridor 11 was most often selected for versatility and Tyndall Bypass. Combined with Corridor 8, it was second most often selected for the additional categories of: use of existing bridges and roadways, access to and/or between places, most direct route, and personal reasons.

Corridor 12 was second most often selected for use of existing bridges/roadways and the Tyndall Bypass. Combined with Corridor 9, it was most selected for use of existing bridges and roadways.

Corridor 13 Corridor 13 in combination with Corridor 10 was second most often selected in the environment category.

Corridor 14 was selected most often for congestion relief/avoidance and hurricane/emergency evacuation, and second-most often selected for economic and access to north. In combination with Corridor 15, it was most often selected for economic, congestion relief, hurricane evacuation, access to north, and property impacts/ relocations. The combined Corridor 14/15 was also second most selected for cost.

Corridor 15 was selected most often for access to north and property impacts/relocations, and second most often selected for congestion relief/avoidance and hurricane/emergency evacuation. Combined with Corridor 14, it was most often selected for economic, congestion relief/avoidance, hurricane/emergency evacuation, access to north, and property impacts/ relocations.

Corridor 16 was selected most often for economic and use of existing bridges and roads. It was second most often selected for property impacts/relocations. In the analysis of combined corridors, Corridor 16 was second most often selected for economic, use of existing bridges and roads, and property impacts/relocations.

Corridor 17 was selected most often for economic, environment, and safety. It was second most selected for cost, versatility, access to and/or between places, most direct route, and personal reasons. Combined with Corridor 7 it was most preferred for economic, costs, environment, access to and/or between places, most direct route, personal reasons, and safety. Combined Corridor 7/17 was second most preferred for hurricane evacuation and versatility.

Corridor 18 was second most selected for economic, congestion relief/avoidance, and access to north. In the analysis of combined alternatives, Corridor 18 was second most selected for congestion relief and access to north.

Corridors 7 and 17 were the most preferred corridors. The primary difference between these two corridors was that Corridor 7 was most frequently selected first with Corridor 17 selected second.

Because many of the corridors have very similar alignments (Corridors 7 and 17, 8 and 11, 9 and 12, 10 and 13, and 14 and 15), a second analysis was conducted where the votes for pairs of similar corridors were combined to determine if there would be any change in the preferred corridors from that reached by counting corridors separately. Because of the similarity between corridors it was thought that this would permit a more accurate picture of the public's perceptions regarding the corridors.

The combination of Corridor 7 and Corridor 17 remained the most preferred with the second most preferred the combination of Corridors 14 and 15.

The study team then identified the issue of greatest importance to the public. Based on the number of responders (67) selecting it, the issue of greatest concern to the public is the most direct/shortest route. It should be noted that although the greatest number of responders voted for the shortest, most direct route, the shortest/most direct route was not necessarily the same route for all respondents. However, the second most important issue category, access to and/or between places, was selected by less than half the number of respondents (28) selecting the most direct/shortest route. Therefore, it was concluded the most important issue to the public in the identification of an alternative corridor was that it provide the most/shortest route.

5.4.4.2 Second Public Opinion Survey

The second public opinion survey was distributed at the Alternatives Public Workshop. Of the 533 surveys returned, 431 respondents were in favor of the project, 50 were opposed to the project and 52 were undecided about the project.

Table 5-9 provides the responses to questions about the effect of the project on growth and economic benefit.

Table 5-9: Public Opinion Results of the Project's Effects on Growth, Growth Benefit, & Business Benefit

Response	Induces Growth	Growth Benefit	Business Benefit
Yes	420	383	95
No	39	36	6
Don't Know	46	66	48
No Response	28	48	384
Total	533	533	533

The majority of respondents agreed that the proposed project would induce growth and would provide a growth benefit with only 39 disagreeing that the project would induce growth and 36 disagreeing that the project would have a growth benefit. The remainder of the 533 respondents either did not know or did not respond. Only 95 respondents agreed and six disagreed that the project would benefit business, while 48 expressed that they did not know and 384 did not respond.

Respondents were asked to identify their three most important benefits of the project, ranking them from one to three. **Table 5-10** summarizes their responses.

Table 5-10: Total Votes for the Gulf Coast Parkway Project's Benefits

Project Benefits	Rank		
	Most Important	Second-Most Important	Third-Most Important
Decreased Roadway Congestion	36	81	23
Roadway Safety	73	44	0
Improved Travel Time	15	24	**222**
Hurricane/ Emergency	84	84	19
Economic Improvement	**221**	0	0
Induced Growth	31	**91**	25
Tyndall Bypass	13	52	65
Better Connectivity	18	85	45

From **Table 5-10**, the majority of respondents (221) perceived economic improvement as the most important benefit of the project, with hurricane/emergency (84) and roadway safety (73) coming distant seconds. The second most important benefit was less clear as four categories were split nearly equally: induced growth received 91 votes, better connectivity received 85 votes, hurricane evacuation received 84 votes, and congestion relief received 81 votes. The third most important benefit provided by the project was clearly reduced travel times (222).

Respondents were also asked to identify their three greatest concerns regarding the project, again ranking them from one to three. **Table 5-11** summarizes their responses.

Table 5-11: Total Votes for the Gulf Coast Parkway Project's Greatest Concerns

Project Concerns	Rank		
	Most Important	Second-Most Important	Third-Most Important
Increased Roadway Congestion	58	0	0
Roadway Safety	82	18	0
Potential Bridges	32	38	14
Property Relocations	**115**	37	4
Waterway Navigation	4	23	13
Wetlands	23	64	108
Wildlife and Habitat	5	72	**140**
Other Environmental	0	5	84
Induced Growth	38	65	17
Project Costs	100	**101**	60

From **Table 5-11**, the greatest concern identified by the respondents was property relocations (115) followed by project costs (100) and roadway safety (82). The second greatest concern was project costs (101) followed by wildlife and habitat (72), induced growth (65), and wetlands (64). The third greatest

concern was wildlife and habitat (140) followed by wetlands (108) and other environmental concerns (84).

Table 5-12 summarizes the responses received to the question of whether or not the benefits of the project outweighed the impacts.

Table 5-12: Project Benefits Versus Project Impacts

Responses	Number Responding
Benefits outweigh Impacts	344
Impacts outweigh Benefits	55
Undecided	64
No response	70
Total	**533**

Approximately 65 percent of the total number of respondents stated that the project benefits outweighed the impacts. If the number of undecided and those that did not respond to the question are eliminated from the total responses received, the percentage increases to 86 percent. Those that believe the impacts would outweigh the project benefits were limited to 10 percent of the total respondents. If those that were undecided or did not respond are eliminated from the total, the percentage of those believing the impacts outweigh the benefits increases to nearly 14 percent.

When asked which direction respondents traveled from US 98 in Gulf County, 234 responded that they traveled to US 231 and 197 responded they traveled to US 98 (Tyndall Parkway). A total of 102 did not answer this question.

Respondents were asked to identify the route they would most likely travel if they were to travel between the project's southern terminus (US 98 at CR 386) and US 231 and if they were to travel between the southern terminus and US 98 (Tyndall Parkway). **Table 5-13** summarizes the responses to this question.

Table 5-13: Route Most Likely to be Used Depending on Destination

Alternative	US 231	US 98 (Tyndall Parkway)
8	34	46
14	25	23
15	53	19
17	278	281
19	88	68

The alternative route chosen most frequently was Alternative 17 regardless of whether the traveler was going to and from US 98 or to and from US 231. A total of 278 respondents selected Alternative 17 as the best route to travel to US 231, and a total of 281 respondents selected Alternative 17 as the best route to travel to US 98 (Tyndall Parkway).

Respondents were asked to identity their top two publicly preferred alternatives. **Table 5-14** summarizes the responses received for first and second preferences.

Table 5-14: Total Responses for Top Two Publicly Preferred Alternatives

	First Publicly Preferred Alternative					Second Publicly Preferred Alternative					No Build Alternative Selected or None
	8	14	15	17	19	8	14	15	17	19	
Total	69	67	22	287	17	0	18	59	38	280	138

The most selected alternative for most preferred route was Alternative 17 (287) or approximately 54 percent of the total surveys returned had Alternative 17 as their most publicly preferred alternative. The second most preferred route was Alternative 19 (280). There were 138 no responses or votes for the no Build Alternative. This number is approximately 26 percent of the total surveys returned.

A total of 431 of the 533 respondents were in favor or the project, 50 were opposed, and 52 were undecided.

5.4.5 Project Website

The FDOT developed a project website found at http://www.gulfcoastparkway.com. The website was set up to provide the community with the latest project information about the ETDM process, project description, project need, alternatives, schedule, information about public involvement and announcements for upcoming workshops, answers to frequently asked questions, links, documents, and FDOT contact information. It also provides the opportunity for citizens to comment on the study. The project has had over 8,000 visits and over 13,000 web pages viewed.

The project website also provides a means for the public to view and/or download all of the material that was presented at the workshops, including the presentation. The public opinion survey and comment forms were also available on the project website where both could be filled out online and submitted or downloaded and returned by mail.

5.4.6 Public Hearing

FDOT will not make a final decision on the proposed action or any alternative until the public hearing has been held on this project and all comments received have been taken into consideration. The Final EIS/ROD will update the information in this document including any public comments made during or after the public hearing.

5.5 RESOLUTIONS AND LETTERS OF SUPPORT

Resolutions from local governments and letters of support from a special interest groups have been received at various stages of the project's development. A list of the governments and agencies submitting resolutions or letters of support are listed below. Copies of the documents are provided in **Appendix C**.

- Department of the Air Force (Tyndall AFB) 9/9/02 Letter
- Panama City MPO 4/28/03 Letter
- Panama City MPO Resolution 03-06
- City of Springfield Resolution 09-10
- City of Callaway Resolution 09-23
- Bay County TPO Resolution 09-47
- Gulf County Board of County Commissioners 11/3/09 Letter
- Bay County Board of County Commissioners 11/18/09 Letter

- Bay County Chamber of Commerce Resolution of 12/17/09
- Bay County Chamber of Commerce 1/8/10 Letter
- Port St. Joe Port Authority 10/24/12 Letter
- City of Callaway 11/27/12 Letter
- Gulf County Board of County Commissioners Letter 02/12/13

5.6 NEXT STEPS IN THE ENVIRONMENTAL IMPACT STATEMENT

Following approval of the Draft EIS by FHWA and during the 45-day comment period, a public hearing will be held during which comments will be recorded for inclusion in the Final EIS. Following the public review period, the public hearing, and the comment period for this Draft EIS, a Final EIS will be initiated.

Upon completion of the Final EIS, FHWA will issue a single Final EIS and Record of Decision (ROD) document pursuant to Pub. L. 112-141, 126 Stat. 405, Section 1319(b) unless FHWA determines statutory criteria or practicability considerations preclude issuance of the combined document pursuant to Section 1319.

"At this point in time, based on previous public input, early agency coordination, engineering information and environmental studies, which are currently available for public review, Alternative 17 is currently considered the preferred alternative by FDOT. FHWA also considers Alternative 17 to be the preferred alternative. However, FHWA will make the final determination on a preferred alternative once alternative impacts and agency comments on the Draft EIS and public input resulting from the public hearing have been fully evaluated. Unless new information is brought forward through the public and agency comment period, FHWA intends to select Alternative 17 as the preferred alternative and will issue a combined Final EIS/ROD in accordance with Pub. L. 112-141, 126 Stat. 405, Section 1319(b). If FHWA selects another alternative based on public or agency input, FHWA will issue a separate Final EIS and ROAD in accordance with 23 CFR 771.

5.7 LOCATION OF PROJECT DOCUMENTS

This draft EIS and supporting technical documents (**Table 5-15)** is available for review and comment to interested persons, including state and federal agencies, citizens, and elected officials at the FDOT District 3 Office, 1074 Highway 90, Chipley, Florida, 32428, or online at http://www.gulfcoastparkway.com/.

Table 5-15: Supporting Documentation for the Gulf Coast Parkway EIS

Project Phase	Report
Corridor Analysis	Cultural Resources Corridor Probability Assessment
	Corridor Alternatives Evaluation Summary Report
Alternatives Development	Draft Preliminary Engineering Report
	Draft Location Hydraulic Report
	Pond Requirements Report
	Draft Traffic Report
Environmental Analysis	Draft Air Quality Memorandum for Gulf and Bay County
	Draft Conceptual Stage Relocation Plan
	Draft Contamination Screening Evaluation Report
	Draft Cultural Resources Survey Assessment
	Draft Endangered Species Biological Assessment
	Draft Indirect and Cumulative Effects Report
	Hurricane Evacuation Analysis for the Proposed Gulf Coast Parkway
	Draft Noise Analysis Report
	Draft Public Involvement Program Summary Report
	Draft Wetland Evaluation Report

SECTION 6 COMMITMENTS AND RECOMMENDATIONS

6.1 COMMITMENTS

Florida Department of Transportation (FDOT) has established a commitment compliance program to ensure that commitments made during the project's development are completed during construction. The primary vehicle for ensuring commitments made during the Project Development and Environment (PD&E) phase have been included in the design plans for the contractor is accomplished through FDOT's reevaluation process. The reevaluation process is conducted at each major stage of project development (preliminary engineering, right-of-way acquisition, and construction advertisement) and serves to ensure project compliance with all applicable Federal and state laws. It also provides the mechanism whereby commitments made during the project development process are identified, and updated, if necessary. Any new commitments or laws which may have come into effect since approval of the final environmental document are addressed in the reevaluation. At the construction advertisement phase all relevant commitments have been included in the design plans used by the contractor to construct the project.

6.1.1 Commitment Compliance

During construction verification of the contractor's compliance with the commitments shown on the design plans is documented by Construction Engineering Inspection engineer who inspects the contractor's work during construction.

Steps in FDOT's commitment compliance program are listed below.

- After completion of the PD&E phase of project development, the reevaluation manager sends the approved environmental document that includes the commitments to the Design Project Manager, along with any other pertinent information the Design Project Manager needs to know. This informs the Design Project Manager before the reevaluation phase that the project has commitments to be implemented during design or included in the design plans/contract documents.
- Also after completion of the PD&E phase, FDOT task managers provide FDOT Permit staff with any commitments made during PD&E for inclusion in the Permit Memo to be provided to the project contractor.
- Permit staff request that the design project manager include in the General Notes on the construction plans that there are project commitments that the contractor must follow and those commitments can be found in the Permit Memo.
- The reevaluation process is then used to update the status of commitments and confirm that commitments have been addressed in the project design (if applicable) and included in the design plans/contract documents (if applicable). The reevaluation process is also used to finalize any pending coordination that required the design plans to fully document impacts to finalize any mitigation/avoidance measures deemed appropriate by the jurisdictional agency (United States Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FFWCC), National Marine Fisheries Service (NMFS), etc.)
- During construction the Construction Engineering Inspection engineer provides feedback on and documentation that commitments required of the contractor were implemented. This feedback, including correspondence and photographs, is kept in a commitment implementation file.
- SharePoint and Project Suite are used to post commitments and commitment-related documents in the plan.

6.1.2 Specific Commitments

The FDOT has identified the following commitments with regard to the proposed transportation improvement project by which it will adhere:

Socioeconomics, Communities and Neighborhoods

The extent of potential construction effects will depend largely on the alternative selected. In any case, FDOT's *Standard Specifications for Road and Bridge Construction* and Best Management Practices (BMP) will be utilized to reduce noise, traffic delays, air quality impacts and other issues that would impacts resident's quality of life. Types of measures that would be implemented are discussed in more detail below, but could include storage of materials out-of-site, coordinating with public service and utility providers to minimize disruption in the delivery of services, confining work to daylight hours, minimizing fugitive dust, requiring noise controls on equipment, and implementing a traffic control plan to minimize possible delays.

Relocations

FDOT will carry out a right-of-way acquisition and relocation program in accordance with Florida Statute 339.09 and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646 as amended by Public Law 100-17). The brochures that describe in detail the FDOT's relocation assistance program and right-of-way acquisition program are "Your Relocation: Residential", "Your Relocation: Business, Farms, and Nonprofit Organizations", "Your Relocation: Signs", and "The Real Estate Acquisition Process". All of these brochures are distributed at all public hearings and made available upon request to any interested persons. This project has been developed in accordance with the Civil Rights Act of 1964, as amended by the Civil Rights Act of 1968, and in accordance with Executive Order 12898.

Community Services

Construction activities could result in temporary lane closures on some roads, potentially increasing congestion and slowing emergency response times. Therefore, the contractor will be required to coordinate construction activities that affect existing roads with emergency service providers and notify fire departments of any waterline relocations that may affect water supply for fire suppression. In addition, the contractor will be required to coordinate with school officials to minimize delays on school bus routes.

Cultural Resources

State Historic Preservation Officer (SHPO) requested an underwater cultural resources survey be conducted after the selection of a preferred alternative. A maritime archaeology desktop evaluation has been conducted of a 1,000 foot buffer at locations where the project alternatives cross a perennial water body. This study concluded that Alternatives 8, 14, and 15 had a low potential for submerged cultural resources but that Alternatives 17 and 19 had a moderate probability for submerged cultural resources due to their crossing at East Bay and the history of marine traffic in the area. Therefore, the study recommended that if Alternatives 17 or 19 were selected as the preferred alternative, a remote-sensing survey should be conducted at the crossing of East Bay. No further investigations for Alternatives 8, 14, and 15 were recommended.

Since Alternative 17 has been identified as the recommended preferred alternative, FDOT is proceeding with an underwater survey of the proposed crossing of East Bay. The results of this survey, including the

SHPO's concurrence with the findings, will be documented in the Final Environmental Impact Statement (EIS).

Utilities

Much of the project is on new alignment, but in areas where existing roads are incorporated into the project, utilities could be affected by some construction activities such as earth moving and pile driving. As a result, there may be a need to temporarily re-route utility lines or cables. Such relocations of utility lines and cables may result in intermittent and short-term interruption of service. Prior to construction, coordination will be conducted with utility providers to minimize any disruption in service.

Railroads

FDOT will coordinate with the Bay Line Railroad to ensure that the Gulf Coast Parkway crossing of the railroad meets clearances, geometrics, utilities, provisions for future tracks, and maintenance road requirements for off-track equipment.

FDOT will notify the Bay Line Railroad in advance of pending construction activities in the vicinity of the railroad during project's construction.

Air Quality

The project is in an area that has been designated by the United States Environmental Protection Agency (USEPA) as attainment for all the National Ambient Air Quality Standards (NAAQS). Therefore, the transportation conformity rule (40 Code of Federal Regulations (CFR) Part 93) does not apply. However, the FDOT is aware of the proposed USEPA rule change. The potential for air quality impacts under the revised rules will be reevaluated during design once the rule changes are finalized and Bay County has established air quality standards

The air quality effect of highway construction activities will be temporary and will primarily be in the form of emissions from diesel-powered construction equipment and dust from embankment and haul road areas. Air pollution associated with the creation of airborne particles will be effectively controlled through the use of watering or the application of other controlled materials in accordance with FDOT's *Standard Specifications for Road and Bridge Construction*.

Noise and Vibration

A land use review will also be implemented during the design phase to identify noise sensitive sites that may have received a building permit subsequent to the noise study, but prior to the date of public knowledge (i.e., date that the environmental document has been approved by Federal Highway Administration (FHWA). If the review identifies noise sensitive sites that have been permitted prior to the date of public knowledge, then those noise sensitive sites will be evaluated for traffic noise impacts and abatement considerations.

Noise and vibration effects may result from heavy equipment movement and construction activities, such as bridge pile driving and vibratory compaction of embankments. Construction noise and vibration sensitive sites adjacent to the project include: schools, churches, eye centers, medical centers, and residences. For these sensitive sites the application of the FDOT *Standard Specifications for Road and Bridge Construction* will minimize or eliminate most potential construction noise and vibration impacts. However should unanticipated noise or vibration issues arise during the construction process, the Project

Engineer, in concert with the District Noise Specialist and the Contractor, will investigate additional methods of controlling these impacts.

Noise and vibration effects on fish from pile driving may be managed with one of the following measures,

1) Use of wood or concrete piles instead of hollow steel piles.
2) If using hollow steel piles, restrict their installation to a time of year when larval and juvenile stages of fish species with designated Essential Fish Habitat (EFH) are not present; drive piles during low tide periods when located in intertidal and shallow subtidal areas; use a vibratory hammer as much as possible; monitor peak Sound Pressure Levels (SPL) during pile driving to ensure that they do not exceed the 190 dB re 1PA threshold for injury to fish; employ measures to attenuate sound should SPLs exceed 180 dB re 1 PA (i.e. air bubble curtain system or air-filled coffer dam, use of a smaller hammer, and use of a hydraulic hammer if impact driving cannot be avoided); and drive piles when the current is reduced in areas of strong current.
3) Use of the construction technique called "ramping up" which requires the contractor to use soft-start procedures where the hammer is not used at full strength at the start of a pile driving session.

The need for these measures will be further evaluated during the project's design and special provisions may be added to the project's construction specifications, as appropriate.

Wetlands

During the project design phase, jurisdictional wetlands will be field-delineated resulting in a more detailed assessment of wetland involvement (quantity and quality) for the preferred alternative. These detailed field assessments may facilitate further reductions in potential wetland involvement through minor shifts of the preferred alternative, if practical.

Mitigation will be required for direct and indirect wetland impacts. At this point in project development, FDOT is not prepared to state definitely how impacts to wetlands will be mitigated due to the varying types and locations of resources that could be impacted. It is unknown as to the degree, type, or location of mitigation that will be required until permitting requirements for the Preferred Alternative are evaluated. However, it is anticipated that wetland impacts which result from the construction of this project will be mitigated pursuant to Section 373.4137, F.S. to satisfy all mitigation requirements of Part IV. Chapter 373, F.S. and 33 U.S.C. s. 1344. Compensatory mitigation for this project will be completed through the use of mitigation banks and any other mitigation options that satisfy state and federal requirements.

A critical aspect of securing wetland mitigation concerns the amount, type, and timing of wetland impacts. Wetland involvement associated with the Gulf Coast Parkway project is contained within the St. Andrews-St. Joseph Bays watershed (hydrologic unit = 03140101; "subject watershed"). At this stage of the project, i.e., PD&E level, potential wetland involvement has been estimated based upon desktop analyses and field reconnaissance/assessments (Uniform Mitigation Assessment Methodology {UMAM} functional loss scores ranged between 203 and 349). According to data housed and maintained by the United States Army Corps of Engineers (USACE) Regulatory In-lieu fee and Bank Information Tracking System (http://geo.usace.army.mil/ribits/index.html; accessed March 9, 2012) and the Northwest Florida Water Management District (NWFWMD) Wetland Programs websites (http://www.nwfwmdwetlands.com/index.php?Page=11; accessed March 9, 2012), it appears that four existing private mitigation banks (Breakfast Point, Devils Swamp, Sweetwater, Nokuse) and seven NWFWMD/umbrella bank sites (Sandhill Lakes, Wards Creek, Wards Creek West, Cat Creek, Devil's Hole, Point Washington, Lynn

Haven,) have service areas that include the subject watershed. In addition, one proposed private mitigation bank (Bear Creek) includes the subject watershed in its service area. As of March 9, 2012, the 11 existing mitigation banks/sites identified above collectively have approximately 600 palustrine wetland credits currently available. None of these existing banks/sites appear to provide estuarine credits.

Construction activities have the potential for short-term, temporary impacts on wetlands. FDOT will address the potential effects of construction activities on wetlands in accordance with FDOT's most current edition of *Standard Specifications for Road and Bridge Construction* and through the use of BMPs at wetland, bay and stream crossings. Some typical measures include the covering stockpiled materials; locating staging and stockpiling areas sufficiently distant from surfaces waters; limiting the area of exposed soil at any given time during construction; controlling erosion and sedimentation through mulching, matting, and netting; use of filter fabric fencing to prevent sediment from leaving the construction site; placement of rock entrance mats to reduce tracking of dirt from construction vehicles; use of sediment traps and ponds and installation of swales and ditches to intercept runoff; and regular site maintenance to prevent the accumulation of debris. The Engineer may require the use of additional erosion and sedimentation control features or methods not specified in the plans to address unanticipated conditions.

Essential Fish Habitat

As requested by the National Marine Fisheries Service (NMFS), if Alternative 17 or 19 are selected, an additional seagrass survey during the June-August prime growing season will be completed prior to construction.

Mitigation will be required for direct and indirect impacts to wetlands associated with Essential Fish Habitat (EFH) (emergent marsh). At this point in project development, FDOT is not prepared to state definitely how impacts to these wetlands will be mitigated due to current lack of any existing mitigation banks with estuarine credits. However, if at the time of permitting there are still no mitigation banks with estuarine credits, out-of-kind credits will be utilized with regulatory agency approval. Therefore, it is anticipated that wetland impacts which result from the construction of this project will be mitigated pursuant to Section 373.4137, F.S. to satisfy all mitigation requirements of Part IV. Chapter 373, F.S. and 33 U.S.C. s. 1344. Compensatory mitigation for this project will be completed through the use of mitigation banks and any other mitigation options that satisfy state and federal requirements..

Construction activities could have short-term, temporary impacts on EFH, such as increased sediment loads in stormwater runoff from the construction site and increased turbidity during in-water work. Both of these contribute to impacts on benthic aquatic habitats.

The contractor shall be required to develop, implement and adhere to a "marine resource protection plan" to ensure that marine resources within and outside of the right-of-way are not damaged by construction activities. This plan may involve strategies such as marking off adjacent marine resources outside of the proposed project's alignment with buoys, so that construction related boat traffic does not affect adjacent marine resources, i.e., emergent vegetation, seagrass, etc., and barges are not moored directly on or over marine resources. Consideration should be taken to implement strategies to reduce impacts to the existing EFH resources, where possible. For instance, depending on the specific construction activities chosen for this area, some debris (concrete and woody debris) associated with oyster resources may need to be removed for public safety considerations. Impacts such as these should be considered in the overall proposed methodology.

Appropriate construction controls and BMP will be implemented to ensure protection of marine resources. Construction BMPs should incorporate, but not be limited to: working within adjacent areas

devoid of marine resources, instituting BMP to reduce direct impacts to emergent marsh systems, adequate turbidity controls, utilizing vessels that can operate in depths adequate enough to not scour or prop scar the marine sediments/resources, continual monitoring for presence of wildlife species in the work area, and removal of all construction debris and equipment at completion of the project.

Although not anticipated, if explosives should be utilized during construction activities, then the *Guidelines for the Protection of Manatees and Sea Turtles during the Use of Explosives in the Waters of the State of Florida* should be implemented. The Manatee Construction Conditions set forth by the FFWCC and the USFWS must be followed throughout a construction process. Monitoring for such species shall be conducted throughout the construction process to ensure BMP are being followed.

Since it has been determined the project "may affect" EFH resources, the FDOT intends to reinitiate consultation with NMFS for these resources after the public hearing and during development of the final NEPA document (or final design and permitting of the project) once all agency and public comments have been received and evaluated and a preferred alternative has been selected. At that time NMFS will work with the FDOT to minimize the projects impacts to EFH resources. If for some reason consultation must be reinitiated during final design and permitting, FDOT will complete all consultation and document compliance in a subsequent project reevaluations prior to the project beginning construction. Consistent with 23 CFR 771.133, completion of consultation at a later phase of project development is a commitment by FDOT.

Water Quality

The proposed stormwater facility design will include, at a minimum, the water quantity requirements for water quality impacts as required by the NWFWMD in Rule 40A-1, 40A-4, 62-4, 62-341, 62-346, the Florida Department of Environmental Protection (FDEP) Rules 62-312 and 62-25 Florida Administrative Code (FAC) and the USEPA. Therefore, no further mitigation for water quality impacts will be needed.

Construction activities have the potential for short-term, temporary impacts on water quality. FDOT will address the potential effects of construction activities on water quality in accordance with FDOT's most current edition of *Standard Specifications for Road and Bridge Construction* and through the use of BMP. The Engineer may require the use of additional erosion and sedimentation control features or methods not specified in the plans to address unanticipated conditions.

Floodplains

Longitudinal encroachments will be avoided and minimized as much as possible during design. The project will be designed to be consistent with applicable regulatory and design standards, with no significant changes to base flood elevations or flood limits. Cross drains will be designed to maintain natural and beneficial floodplain values.

The detailed hydraulics for the crossing of Callaway Creek, a regulated floodway, will be evaluated during the design phase when topographic survey is obtained. At that time, FEMA No-Rise procedures for regulated floodways will be followed including proper coordination with Bay County staff. The procedures require using water-surface profile computer models to ensure that no water surface increase is created by the proposed bridge and embankment. Given a no-rise situation, Floodway Map or Flood Insurance Study revisions will not be required.

Best management practices will be utilized to minimize erosion and sedimentation during construction.

Wildlife and Habitat

Wildlife passages may be provided to reduce habitat fragmentation and limit roadway mortality. Wildlife passages would be installed in appropriate locations in accordance with FDOT *Wildlife Crossing Guidelines* (see Appendix B of the Endangered Species Biological Assessment Report {ESBAR}).

Specific minimization measures and commitments have been included in the ESBAR reviewed by the resource agencies. Any measures not included in the initial submittal of the ESBAR were added to the subsequent revision. The complete set of mitigation and/or protection measures identified for consideration include:

- Conducting pre-construction surveys at appropriate times for listed species to enhance assessments concerning location and population status. For example, since gopher tortoise burrows and habitat found within alternative alignments and associated 300-foot buffers may be impacted, FFWCC Gopher Tortoise Permitting Guidelines pertaining to surveying, excavating, and relocating will be followed once a preferred alternative is selected.

- If seasonally-appropriate surveys for federally-listed plants potentially associated with the preferred alternative are conducted, the project sponsor will also consider and avoid potential impacts to state-listed plants, where practical.

- Avoiding potential impacts to manatees. Depending upon the methodology used for bridge installation, potential protection measures could include stopping work if a manatee comes within a specified distance of in-water work, posting observers to watch for manatees, and/or monitoring turbidity barriers for potential entanglement. *Standard Manatee Conditions for In-Water Work, 2011*, developed by the FFWCC and the USFWS will be followed, as necessary. If explosives are to be utilized, then the *Guidelines for the Protection of Manatees and Sea Turtles during the Use of Explosives in the Waters of the State of Florida* will also be implemented.

- Minimizing direct/indirect wetland impacts, e.g., sedimentation, by utilizing appropriate stormwater design and BMPs at wetland and stream crossings during constructions. Regulatory agencies will have the opportunity to review 60 percent plans that will include proposed design for crossing structures via the joint Environmental Resource Permit application. The 60 percent plans submitted with the Environmental Resource Permit application will also contain a design erosion control plan that will be subject to regulatory agency review and comment. Design plans will follow the NWFWMD regulations requiring that an operating permit be obtained for the constructed stormwater facilities.

- Per the suggestion of the USFWS, a survey for bald eagle nests within the preferred alternative and associated buffers will be conducted one year prior to construction.

- Implementing *Standard Protection Measures for the Eastern Indigo Snake* during construction.

- Implementing *Construction Special Provisions Gulf Sturgeon Protection Guidelines* during construction.

- Utilizing "sea turtle friendly" lighting strategies on bridges, if deemed necessary.

- Conducting a Phase II Reticulated Flatwoods Salamander field evaluation for a representative sample of potential ponds within 1,500 feet of the preferred alternative during design and

permitting. A re-assessment of the Determination of Effect will be based on the results of the Phase II field evaluation.

- Facilitating movement of black bears via wildlife crossings, if deemed necessary

- Utilizing signage informing motorists of potential wildlife hazards, e.g., deer and bear crossings, if deemed necessary.

- Invasive/exotic species will be managed and controlled in accordance with FDOT's *Standard Specifications for Road and Bridge Construction* and through the use of BMP. The contractor will be required to monitor turf areas and remove all competing vegetation, pest plants and noxious weeds as listed by the Florida Exotic Plant Pest Council, Category 1 *List of Invasive Species*. Insecticides and herbicides used to control invasive/exotic species will be approved by the Florida Department of Agriculture.

- FDOT will complete the Section 7 consultation process and obtain a concurrence from all resource agencies per the reasonable assurance measures previously described in Section 4.3.14 and in compliance with 23 CFR 771.133.

Contamination

The State of Florida has evaluated the proposed right-of-way and has identified potentially contaminated sites for the various proposed alternatives. Sites having medium or high risk of contamination concerns will be re-evaluated prior to construction. If required, a Level 2 investigation will be performed to verify the type and extent of contamination present. Based on the findings of the updated file review and/or Level 2 investigation, the design engineers may be instructed to avoid the area(s) of concern or to include Special Provisions with the design plans. Actual cleanup will take place prior to construction, if feasible.

Procedures specifying the contractor's responsibilities in regard to encountering petroleum contaminated soil and/or groundwater are set forth in the FDOT's *Standard Specifications for Road and Bridge Construction*. Resolution of problems associated with contamination will be coordinated with appropriate regulatory agencies and, prior to right-of-way acquisition, appropriate action will be taken, prior to construction.

Navigation

Should the bridge construction require in-water work, there could be a potential for conflicts between construction activities and vessels on the waterway. Activities that could result in blockage of a channel or interrupt traffic flow are required to obtain authorization from the United States Coast Guard (USCG). FDOT *Standard Specifications for Road and Bridge Construction* requires under Section 103-1.3 that the USCG be provided 60 days in advance with drawings showing the location of temporary work structures relative to the navigable waterway, lighting on the temporary work structures that meets the USCG requirements, and notification to mariners of construction in or near the navigation channel. These measures should be sufficient to minimize conflicts between bridge construction activities and vessels navigating the either the Intracoastal Waterway (ICWW) through East Bay or the ICWW/Wetappo Creek.

FDOT will work closely with the USCG to ensure that this project meets all navigational requirements and that the bridge is constructed in a manner that will meet the needs of waterway users. FDOT will meet with the USCG to explain in more detail its plans concerning the bridge and to fully accommodate USCG requirements. FDOT will utilize Section – 103-1.3 of the *Standard Specifications for Road and Bridge Construction* to minimize conflicts between construction activities and waterway users.

Maintenance of Traffic

Maintenance of traffic and sequence of construction will be planned and scheduled to minimize traffic delays throughout the project. Signs will be used to provide notice of road closures and other pertinent information to the traveling public. The local news media will be notified in advance of road closings and other construction-related activities, which could excessively inconvenience the community so that motorists, residents, and business persons can make other accommodations. A sign providing the name, address, and telephone of a Department contact person will be displayed on-site to assist the public in obtaining immediate answers to questions and logging complaints about project activity. All provisions of the FDOT's *Standard Specifications for Road and Bridge Construction* will be followed.

Maintenance of Access

Access to all businesses and residences will be maintained to the extent practical through controlled construction scheduling. In the County Road (CR) 386 area from US 98 to Overstreet, along State Road (SR) 22, and at the intersections of the Gulf Coast Parkway with US 98 in Gulf County, with US 98 (Tyndall Parkway), and with US 231, the present traffic congestion may become worse during stages of construction where narrow lanes may be necessary. Traffic delays will be controlled to the extent possible where many construction operations are in progress at the same time. The contractor will be required to maintain two lanes of traffic in each direction along CR 386 and SR 22 and at the project's intersection with US 98 in Gulf County, with US 98 (Tyndall Parkway), and with US 231 at all times and to comply with the BMP of FDOT.

Construction Staging

In addition to the construction of the road and bridges associated with the project, there will be the need to have construction staging areas in the vicinity of each project phase as it goes to construction. Construction staging areas are used for the delivery and storage of construction materials and equipment, contractor offices, and employee parking. These areas vary in size, depending on the size of the construction operation, and may require grading or excavation to level the site, install drainage improvements, and connect utilities. In addition, temporary driveways would be established from access roads to the staging area. Temporary erosion and sediment control measures would be used to prevent runoff of untreated stormwater and sediment from entering nearby wetlands or water bodies, or adjacent properties. After construction has been completed, staging areas would be stabilized, landscaped, or restored and utilities disconnected in accordance with FDOT's *Standard Specifications for Road and Bridge Construction*.

Disposal of Unsuitable Materials

Construction of the roadway and bridges requires excavation of unsuitable material (muck), placement of embankments, and use of materials, such as limerock, asphaltic concrete, and portland cement concrete. Demucking is anticipated at most of the wetland sites and will be controlled by Section 120 of the FDOT's *Standard Specifications for Road and Bridge Construction*. Disposal will be on-site in detention areas or off-site. The removal of structures and debris will be in accordance with local and state regulation agencies permitting this operation. The contractor is responsible for his methods of controlling pollution on haul roads, in borrow pits and other materials pits, and in areas used for disposal of waste materials from the project. Temporary erosion control features, as specified in the FDOT's *Standard Specifications for Road and Bridge Construction*, Section 104, will consist of temporary grassing, sodding, mulching, sandbagging, slope drains, sediment basins, sediment checks, artificial coverings, and berms.

6.2 RECOMMENDATIONS

This section contains two types of recommendations. The first recommendation to be discussed is the FDOT recommended alternative. The second type of recommendation is a list of recommendations that that FHWA and FDOT have identified as measures that if implemented would be beneficial to the minimization of indirect and cumulative effects (ICE).

6.2.1 FDOT Recommended Alternative

At the Draft EIS phase of project development, as a result of the public involvement, environmental studies, and interagency coordination, to date, the alternative to be recommended to FHWA for Location and Design Concept Acceptance will be Alternative 17. Alternative 17 would ultimately provide a four-lane controlled access roadway for 27.9 miles between US 98 in Gulf County and US 231 and US 98 (Tyndall Parkway) in Bay County with a new low level bridges across Cypress Creek, Cooks Creek, and Callaway Bayou and a new 65-foot high level bridge across the ICWW in East Bay (see **Section 2** for specific details on Alternative 17's alignment, typical sections, and proposed bridges).

6.2.2 Other Recommendations

The cumulative effects analysis conducted as part of this study identified potential adverse cumulative effects to sensitive resources that could occur over the twenty year planning period. As a result the FDOT has identified some recommendations for minimizing cumulative adverse effects of forecasted future development. These recommendations are provided below.

What may be useful to those responsible for protecting the state's resources is the creation of regional databases containing information from in ICE analyses. Over time, such a database could determine the accuracy of the methods utilized in conducting indirect and cumulative analysis and in identifying and evaluating impacts with the purpose of taking those that are most effective and providing them to the preparers of these analysis to improve them. The techniques could also be helpful to local planners when evaluating policies and goals of local comprehensive plans or in evaluating the acceptability of proposed development plans.

Data from multiple ICE analyses would permit a state or regional agency to tract impacts to resources on a regional basis and identify when resources may be at risk of reaching a point of no return before such point is reached. The database would also be useful when priorities are reviewed for the purchase of conservation lands.

Greater coordination among local, regional, and state agencies is conducive to establishing a regional approach to meeting needs, such as water supply, and protecting resources. But only local governments with large populations have the resources to implement some of the measures necessary to meeting regional goals. Therefore, state and regional agencies should work to assist those communities without the necessary resources to obtain grants to implement long-term goals.

Public education is an on-going but vital measure to protecting resources. While the loss of habitat is probably the single most significant impact on a number of resources, there are other effects that are less obvious but equally as damaging, such as nonpoint source pollution. Public awareness of the affect of their actions is but the first lesson. It is important to provide the public with alternatives to their behavior to ensure detrimental behavior is replaced with that more respectful of the environment.

SECTION 7 LIST OF PREPARERS

Name and Area of Expertise	Project Role	Registrations/Education	Experience
FEDERAL HIGHWAY ADMINISTRATION			
George Hadley	Environmental Programs Coordinator (former)	B.S. Engineering	40 years in NEPA and PD&E
Buddy Cunill	Environmental Programs Coordinator (current)	M.S. Public Administration	38 years in NEPA and PD&E
Kathy Kendall		M.S. Urban and Regional Planning	
Jorge Rivera		Registered Professional Engineer	
FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT 3			
Blair Martin	District ISD Manager	Registered Professional Engineer	
Alan Vann	PD&E Project Manager		
Brandon Bruner	Environmental Management Coordinator	BS in Civil Engineering	
Laura Haddock	Environmental Document Reviewer	B.S. in Biology, BS in English	
Natalie Furman	Environmental Document Reviewer	B.S. in Biological Sciences	
Amanda Marshall	Cultural Resources Coordinator	AA in Criminal Justice/Education	
Joy Giddens	Permit Coordinator		
ATKINS, INC. (FORMERLY PBS&J) AND SUBCONSULTANTS			
Rosemary Woods	Project Advisor	B.S. -Environmental engineering/minor-biology; University of Florida	25 years in NEPA & PD&E
Greg Garrett	Project Manager	B.S. in Liberal Arts – Economics, Florida Gulf Coast University. MS in Urban and Regional Planning, Florida State University	10 years in NEPA and PD&E studies.
Lee Strickland	Project Engineer (former)	Registered Professional Engineer.	14 years in highway design and PD&E studies
Doug Reed	Project Engineer (current)	Bachelor of Civil Engineering, University of Delaware, December, 1989	20 years highway design and PD&E studies
Chris Hack	Drainage Engineer	Registered Professional Engineer, B.S. in Mechanical Engineering	29 years experience
Amanda Serra	Deputy Drainage Engineer	B.S. Degree in Civil Engineering	7 years transportation design

Name and Area of Expertise	Project Role	Registrations/Education	Experience
Don Harrell	Structures Engineer (former)	Professional Engineer, AA, Civil Engineering Technology	40 years in bridge design
Jerry Osteen	Structures Engineer (current)	Degree in Civil Engineering Technology	39 years in bridge design
Daniel J. Beaty	Traffic (current)	AICP, MS in Urban and Regional Planning, BS in Political Science	19 years in transportation planning
Cesar Segovia	Traffic (former)	AICP, Degree in Civil Engineering, Master Level Degree in Urban Regional Planning	12 years in transportation planning , traffic impact studies and travel demand forecasting
Hardy Smith	Right of Way Estimates	B.S. Degree in Finance and Real Estate	Right of Way Project Manager with 12 years experience in right of way acquisition, negotiations, relocation and Cost Estimates
Frank Keel	Cultural Resources	M.S. in Anthropology/Archaeology, Register of Professional Archaeologists	15 years experience in Florida archaeology and cultural resource management
Chris Merritt	Project Manager (former)	B.S. Degree in Biology	35 years environmental analysis and document preparation
Bryant Brantley	Noise and Air Quality	B.S. Degree in Environmental Management	6 years transportation planning
Catherine Cash	Demographics, Environmental Justice, Economics, Indirect and Cumulative Effects, Visual Quality, Water Quality, Primary Author of EIS	A.I.C.P., B.S. in Geology, M.S. in Urban and Regional Planning	35 years environmental analysis, and environmental document preparation, public involvement

Name and Area of Expertise	Project Role	Registrations/Education	Experience
Larry Barfield	Quality Control	B.A. Degree in Geography	38 years environmental analysis and environmental document preparation
Robert S. McGowan	Graphics, Quality Control	B.A. in Anthropology	15 years PD&E graphics design
Kristin Huber	ETDM and Socio Cultural Evaluations	B.A. Degree in Environmental Studies	6 years experience in NEPA
Wendy Lasher	ETDM	B.S. in Aviation Management	12 years in transportation planning and environmental studies
Eric T. Schneider	Project Biologist	B.S. Environmental Science	12.5 years professional environmental analysis, restoration and regulation
Larry Olney	Project Biologist	B.A. Degrees in Biological Science and Geology	26 years experience in wetland delineation, wetland functional assessments, botanical field studies, threatened and endangered species surveys, resource management and environmental permitting.
Craig Hedman	Project Biologist	Ph.D in Forest Resources	25 years in natural resources management with considerable emphasis on watershed management, wetlands delineation, permitting and mitigation, and threatened and endangered species management

Name and Area of Expertise	Project Role	Registrations/Education	Experience
Alice Price	Quality Control	AICP, M.S. in Aviation Administration, B.S. in Aerospace Administration	11 years of multi-modal planning, NEPA documentation, and public involvement
PREBLE-RISH, INC.			
Elizabeth Moore	Project Manager		
Travis Justice	Project Engineer		

SECTION 8 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM COPIES OF THE STATEMENT ARE SENT

8.1 FEDERAL AGENCIES

Advisory Council on Historic Preservation – Office of Cultural Resources Preservation

United States Department of Agriculture – Southern Region, Regional Forester

United States Department of Agriculture – Natural Resources Conservation Service, State Conservationist

United States Department of Housing and Urban Development, Regional Environmental Officer

Federal Aviation Administration – Airports District Office

Federal Aviation Administration – Regional Director

Federal Emergency Management Agency – Natural Hazards Branch, Chief

United States Army Corps of Engineers – Regulatory Branch, District Engineer

United States Department of Interior – Bureau of Land Management – Eastern States Office

United States Department of Interior – Office of Environmental Policy and Compliance, Director

United States Department of Interior – Fish and Wildlife Service, Field Supervisor

United States Department of Interior – National Park Service – Southeast Regional Office

United States Department of Interior – United States Geological Survey

United States Department of Interior – Bureau of Indian Affairs – Office of Trust Responsibilities

United States Environmental Protection Agency – Region IV, Regional Administrator

United States Department of State – Office of Environment, Health and Natural Resources

United States Department of Commerce – National Marine Fisheries Service – Southeast Regional Office

United States Department of Commerce – National Oceanic and Atmospheric Administration

United States Coast Guard – Commander (obr) – Eighth District

Federal Emergency Management Agency – Assoc. General Counsel for Insurance and Mitigation

Colorado State University – the Libraries, Documents Librarian

United States Environmental Protection Agency – Washington, DC.

United States Department of Transportation – Federal Railroad Administration

United States Department of Transportation - Federal Aviation Administration

8.2 STATE AGENCIES

Florida Department of State, Division of Historical Resources

Florida Department of Environmental Protection

Florida Fish and Wildlife Conservation Commission

Florida Department of Health

8.3 REGIONAL AGENCIES AND ORGANIZATIONS

Apalachee Regional Planning Council

Northwest Florida Water Management District

West Florida Regional Planning Council

Opportunity Florida

8.4 LOCAL AGENCIES AND ORGANIZATIONS

Bay County Transportation Planning Organization

Bay County Planning Department

Gulf County Planning Department

SECTION 9 Index